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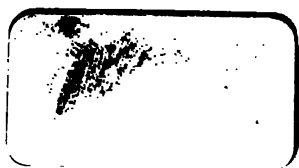
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THE GREAT CANAL  
AT SUEZ  
ITS POLITICAL, ENGINEERING,  
& FINANCIAL HISTORY

BY

ERNEST HENNING

1







THE GREAT CANAL

AT

SUEZ.



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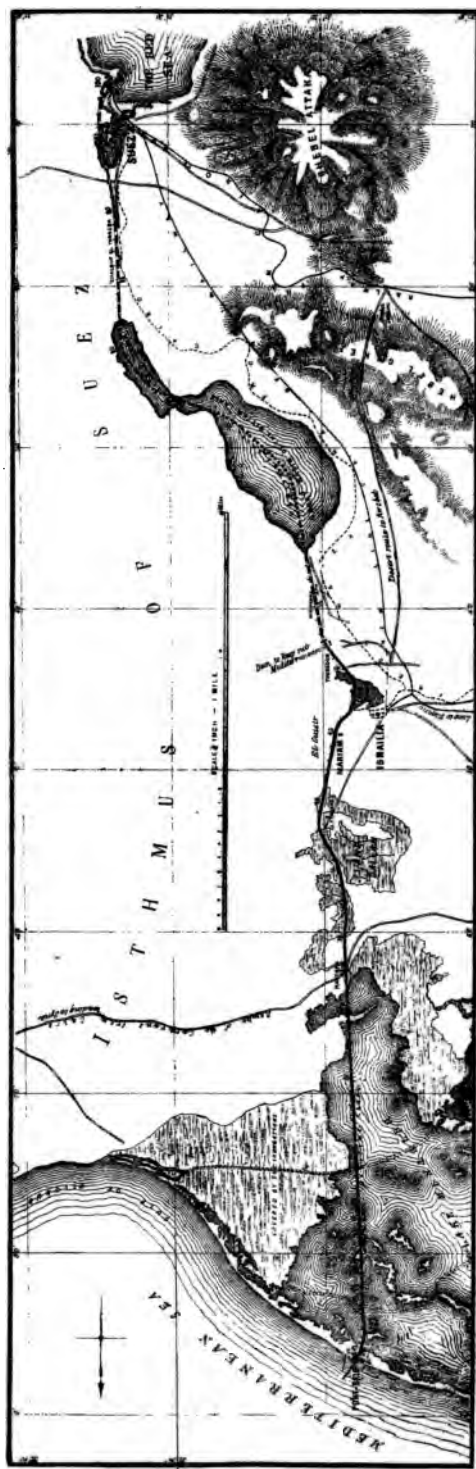


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GREAT CANAL

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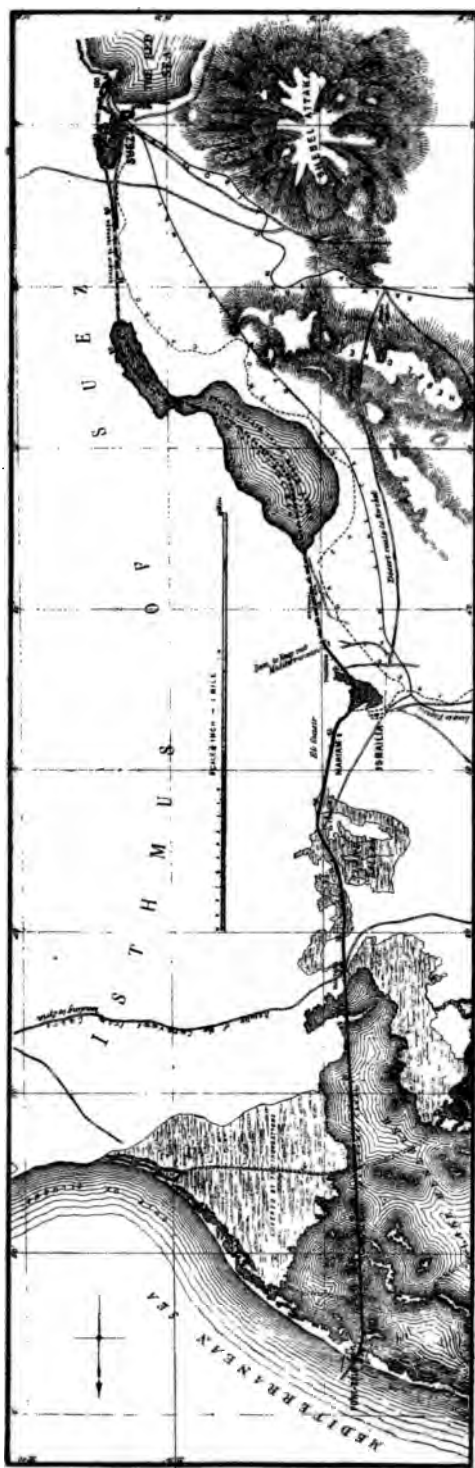
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# THE GREAT CANAL

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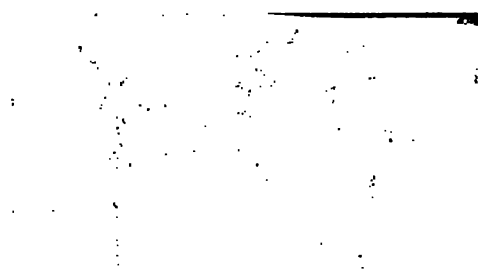
*OFFICIAL REPORT OF THE  
COMMISSIONERS OF THE CANAL*

*OF THE CANAL OF SUEZ,  
TERMINING IN THE MEDITERRANEAN*

*BY THE GENERAL MANAGER*

*OF THE CANAL OF SUEZ,  
AND OF THE CANAL OF  
PORT SAÏD*

*LONDON,  
PRINTED BY THE  
STATIONER, 1861*



# THE GREAT CANAL

AT

## SUEZ:

*ITS POLITICAL, ENGINEERING, AND  
FINANCIAL HISTORY.*

WITH

AN ACCOUNT OF THE STRUGGLES OF ITS PROJECTOR,

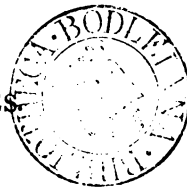
FERDINAND DE LESSEPS.

BY

PERCY FITZGERALD, M.A.

IN TWO VOLUMES

VOL. I.



LONDON:

TINSLEY BROTHERS, 8, CATHERINE STREET, STRAND.

1876.

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LONDON :  
SAVILL, EDWARDS AND CO., PRINTERS, CHANDOS STREET,  
COVENT GARDEN.

TO  
THE VISCOUNTESS STRANGFORD.

---

DEAR LADY STRANGFORD,—

To you I venture to inscribe these Volumes.

The subject may perhaps recall to you your own wanderings, though the narrative cannot pretend to the colour and vivacity of the entertaining “Eastern Shrines and Egyptian Sepulchres.”

Believe me,

Yours, &c.,

PERCY FITZGERALD.

*London, 1876.*





## P R E F A C E.

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THE story of the Suez Canal, together with that of its persevering projector, who has finally succeeded in triumphing over all obstacles and all opposition, has ever seemed to contain something romantic, and to be worthy of being made the subject of a regular narrative. The various divisions described in the title—the political or diplomatic, the engineering or constructive, and the financial, will be all found curious and interesting, as illustrating separate departments of difficulties surmounted by the amazing energy and genius of De Lesseps. To his gifts and labours full justice has scarcely been done; the aim in these volumes has been to furnish a clear, intelligible account of the projector and of his labours—a task, however, of considerable labour and difficulty, owing to the technical character of the various matters treated. In the engineering division the reader will find a full narrative of the construction, based upon the various authentic

reports of the engineers and others ; and in the financial department the reader will find all the balance-sheets from the commencement of the Canal to the present time, with an analysis of the cost, liabilities, and commercial prospects of the undertaking.

From M. de Lesseps I have received the most substantial assistance, who has furnished me with every report, account, pamphlet, and discussion that could throw light on the subject. Of these I have made full use, as well as of his two recently published volumes, "*Lettres, Journal, et Documents.*" I am also under obligation to Lord Tenterden, of the Foreign Office, for assistance of the same kind, as well as to Sir John Hawkshaw, the eminent engineer, who fourteen years ago pronounced that the Canal was a perfectly feasible project.

In whatever aspect we regard the enterprise, whether as a struggle with political powers, or with financial difficulty, or with Nature herself, the one figure is seen conspicuously doing battle, with a surprising versatility and strength, and in the end triumphing by these simple forces. Large as these volumes are, they give but an imperfect idea of this amazing spirit and fertility of resource, which was

never daunted and seemed to be prepared at all points. The diplomatic contest alone would have seemed sufficient to engross the time and energies of a capable and persevering man ; but he was all the time overcoming the engineering and the pecuniary difficulties—tasks quite as great and as engrossing.

It is remarkable that the family of this eminent man should have been distinguished in the same way and have made reputations by their extraordinary display of energy and perseverance. The career of Jean Baptiste Lesseps, uncle of the hero who brought home despatches from the ill-fated La Perouse, making a perilous and almost unprecedented journey from Kamtschatka, in itself reads like a romance. That of his brother Matthew was no less remarkable in Syria, as a controller by force of character of almost barbarous potentates. It may be added that the sons of M. de Lesseps have distinguished themselves as diplomatists and administrators.

In reference to the interesting question of the purchase of the shares by England, I have tried to furnish as full a narrative as possible. This step—the suggestion of which came from Mr. Frederick Greenwood—will, by-and-by, be fruitful of some extraordinary results ; and on this ground it is

deemed desirable that the public should have, ready to its hand a complete view of all the transactions connected with the great property in which it has invested so much. To this end, all the Official Documents have been collected and added in the Appendix.

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ERRATA.

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The reader is requested to correct the following errors :—

Vol. I.—Page 4, line 14, *for* 187—, *read* 1870.

„ „ 138, line 13, *for* 86,000, *read* 80,000.

„ „ 152, last line of note, *for* 246, *read* 72.

„ „ 183, line 9, *for* eighty, *read* eight.

„ „ 195, line 20, *for* had been, *read* had *not* been.

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**FERDINAND DE LESSEPS.**



# THE GREAT CANAL.

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## CHAPTER I.

### THE PROJECTOR.

PERHAPS the most encouraging and picturesque form of struggle, and which commands most sympathy and admiration from the world, will be found to be that of the Adventurer, in the honest sense of the term, who enters on some forlorn project that has all the magnificence of a dream, who lives to carry it through, and to be at last successful and triumphant. After being ridiculed, and even reviled as a visionary, thwarted where even some faint glimmerings of success have appeared, he has still held on his way, supported by a faith and an enthusiasm that seem miraculous. He has seen the years go by until life itself has been well-nigh spent ; his own resources, with those of others who had some half-hearted trust in him, have melted away: until at last he comes to be set

down as an intruder—a bore—a disturber of the community at its business, and he is thrust aside rudely, with Richard's speech, "I'm busy ; thou troublest me ; I'm not in the vein." But at last comes the turn. Some unexpected stroke of fortune has shown the surpassing merit of the design ; or, it may be, that such singleness of purpose is really equivalent to strength, and money, and power, and resources. Success is declared and the end gained. Then is invariably seen the humiliating spectacle of a complacent reception of what must not now be rejected, and a smiling adoption of a portion, at least, of the honours. The old rebuffs and the scoffs are set to the account of the adventurer's own indiscretion, for the world, it would seem, is too great a personage to be compelled to own to mistakes or to cry "peccavi." Though it welcomes the discovery—the result of so painful a struggle—and greedily turns it to profit, after the first greetings it gradually becomes cold, and seems to wish that "no more should be said about it." The thing now belongs to the age, &c. It is ill at ease, as it were ; like some great man who has prophesied that some one, or some thing, would turn out badly, and whom the event has proved to be signally wrong.

There are not many of these dramatic instances of hopes long deferred and final success—scarcely half a dozen in all—that of the Jacquard loom and the Argand burner being two of the most curious. But first in interest, on account of the splendour and romantic character of the scheme itself, its gigantic size, in proportion to the single, enthusiastic heart that carried it through, will always be reckoned the story of FERDINAND DE LESSEPS, and of the Canal which he made across the Isthmus of Suez. This story it is proposed to relate in the following pages.

One morning in the month of August, 1854, a French gentleman was engaged in superintending some masons who were at work, adding a story to his house at La Chênaie, in Berry, a house once occupied by the famous Agnes Sorel. For the last two years he had been devoting himself to agriculture and country pursuits. His career might, indeed, be considered as closed; for he had led a busy, stirring life in foreign countries, having filled the various grades of consulship in Tunis, Egypt, Rotterdam, Malaga, and Barcelona; had been Minister at Madrid, and finally at Rome. He had shown himself a man of energy and purpose, and for his

successful exertions at Barcelona, in 1842, to avert a bombardment, had been presented with a gold medal by the resident French and an address of thanks from the municipality. But his chief experience had been gained in the East, where he had made friends and connexions, and, with a Frenchman's sympathy, had thoroughly identified himself with the politics and manners of Egypt.

After some five-and-twenty years' service he found that his course at Rome was not approved by his Government, on which, in 1849, he resolved, apparently in some disgust, to withdraw from the service and claim his retirement. "In 1849," he told an audience in 187-, "I was sent by the Government on an extraordinary mission to Rome, in conformity with a vote of the sovereign Assembly. I was to follow a line of conduct determined by that vote. When the Legislative replaced the Constituent Assembly I was asked to follow another line of conduct, which it is not for me to blame, but which I could not adopt. Unwilling to betray my mission, I abandoned twenty-nine years of diplomatic service."\*

The name of this gentleman, who was directing the

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\* "Lecture to the Société des Gens des Lettres," 1870.

masons, was De Lesseps ; and, as he was about fifty years old, it might be fairly concluded that his career was closed, and that, beyond an occasional cast at the game of politics—open to any Frenchman at any age—life did not offer space for commencing any important undertaking. But his eyes were ever still turned fondly back to the picturesque land of Egypt ; and he entertained himself with what could be no more than a dream—a fabric that seemed as baseless—of “piercing” the Isthmus of Suez. At the moment almost of his retirement, this project began once more to fill his thoughts ; for, indeed, twenty years before, when in Egypt, he had turned over the scheme, and had seen in imagination the waters flowing through the Canal and the ships sailing through.

He tells us himself how the idea first suggested itself. He had been despatched from Tunis to Egypt in the year 1831, in a vessel called the *Diogenes*, commanded by a Captain Pilate, and after a miserable voyage of thirty-seven days had reached Alexandria, where he had to remain in quarantine. During his imprisonment his consul, M. Minault, visited him, and to amuse him brought him Denon’s great work on the Expedition to Egypt, and finding there the



engineer's (Lepère) report on the project of the Canal, studied it carefully on the consul's recommendation. He then read of all the attempts that had been made to solve the problem, from the days of the Pharaohs to those of Napoleon.\*

During the years that followed, he frankly owns that he was much attracted by the spectacle of another discouraged but persevering adventurer, who, hoping against hope, used to pass by that way carrying on a vain contest with the cautious stupidity of his age. This was Lieutenant WAGHORN. There was a certain resemblance between the persistent efforts of De Lesseps and the heroic perseverance of this projector. Few now recal the almost pathetic constancy of the unwearied creator of the Overland Route, in the face of the most cruel discouragements. Our later projector had a generous sympathy for this faithful pioneer, and was encouraged by his example. "During my first stay in Egypt, in the space between 1831 and 1838, I was greatly struck by the perseverance with which a lieutenant of the Indian navy, Waghorn, attempted to carry out his project of taking the English mails to India through Suez.

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\* "Entretiens," 1864, p. 4.

At this time the regular route was by the Cape, and it took from four to six months. This lieutenant was bent on proving to the English, by practical example, that a direct road to India by the Red Sea was possible. After unheard-of efforts, all he could obtain was the privilege of carrying duplicates of despatches to Calcutta at his own cost. Seven years of his life he devoted to this labour. He wasted all his means. He used to scour France and Italy—now sailing from France, now from Italy, starting from Marseilles or Trieste, and thus getting to Alexandria. There, without losing an instant, he set out for Suez, either on dromedary back or in a canal boat, and at Suez trusted to chance for meeting a steamer. I used to see him arrive in this way during many years. In his own country he passed for a man with a craze. Yet he had undertaken a project which he had worked out with courage and devotion, had ruined his health and his fortunes, and had left his family to beggary, but for the generosity of the Peninsular and Oriental Company, who awarded them a pension.

“He had, however, succeeded in proving that a single person carrying the despatches could arrive by this route at his destination. An inquiry was

conducted by the Bombay Government as to the possibility of steamers navigating the Red Sea. The English Parliament examined various men of professional experience and politicians. Admirals, and particularly the politicians, pronounced solemnly that though sailing vessels might make their way, it was impossible for steamers to do so.\* It was Lieutenant Waghorn, nevertheless, that opened up the route to India over land. He showed that it could be done, and it was the courage he exhibited that left a deep impression on my mind, and served as an example."†

This generous testimony is worth recording, and is worthy of a spirit as persevering as was Waghorn's.

The story of this less fortunate projector is a melancholy one. He had the same energy, but unhappily, not the wonderful gift of our projector—viz., that of fascinating those to whom he addressed his plans, and of inspiring them with an amazing

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\* There may be a little exaggeration here, but many years later, the *Edinburgh Review* authoritatively promulgated the reverse of this statement, declaring that sailing vessels could not safely navigate the Red Sea, and that though steamers might, they would not "pay." Both modes, therefore, were out of the question.

† "Entretiens," 1864, pp. 9-11.

belief in him. There is even a similarity in the career of the two men. Waghorn had been in the navy, and when a mere boy had received his lieutenancy. He had shown great bravery, and had fought and bled for his country ; but his darling scheme soon began to take possession of him, and when twenty-seven years old, he had begun to press it on the public with untiring energy. Like De Lesseps, he addressed meetings all over the kingdom, and he became the *bête noire* of the Post Office and the Admiralty, and in due course was rated a bore, to be checked and thwarted by all the polite forms of official obstruction. The Post Office and the East India Company, we are told, "were opposed to steam navigation as a mode of conveyance of the mails." This principle was laid down with all the solemnity of an economic truth, though it is incomprehensible how such statements could be gravely put forth and accepted. It may, however, have been founded on the interests of a safe and sound ROUTINE, the road by the Cape being established, having a certain old-fashioned and cumbrous simplicity, and involving no trouble to the heads of the department. There was something particularly heroic in the mode adopted by Waghorn for convincing his countrymen

that his scheme was for their interest. It was as though a physician were to persist in treating a sick patient who believed him to be an impostor, and were to convince him by making him well. Waghorn could only prove his case by doing himself what he wished others to do, and this at the expense of his health and fortune. Wearied of his applications, the authorities at last, in 1829, allowed him to carry some despatches as an experiment, when he hurried off, and travelling night and day, reached Suez, where he was told he would find a steamer. The steamer had unfortunately broken down, and did not appear, when the brave man threw himself into an open boat, and for six and a half days pursued a dangerous course down the Red Sea to Aden. Nothing indeed was too much for his exertions. Mainly out of his own resources, and assisted by a committee at Bombay, he next proceeded to make the route available for travellers. He formed the eight halting-places in the desert between Cairo and Suez, and which are now marked on every map of Egypt, built three large hotels, established regular caravans, substituted English carriages for the camels on which passengers had been obliged to mount, and introduced small steamers on the Nile.

In presence of such facilities routine had to yield—how reluctantly it may be conceived when it is stated that, though these arrangements were in working order in 1831, an overland route was not established until 1837. In one of his humble and almost piteous appeals to the authorities, written in 1844, he submits the extraordinary result that out of twenty successive Expresses an average journey of forty days, and an average that scarcely varied by twenty-four hours, had been secured by his system. In 1845 he wished to show that there was a yet greater advantage to be gained by the Trieste route ; and when his express arrived at Suez on October 19th, 1845, he took it on to Alexandria, which he reached the following day, and arrived in London at four in the morning of October 31st—a prodigious feat for those days.

But now his means began to fail, and with them his health. To the last he was, as De Lesseps says, looked on as a man with a craze, a trouble to the public. Now that what he had so long pleaded for had been adopted, men did not care to be reminded of these obstructions. It was with him as with De Lesseps, who is still looked on coldly by reason of the trouble he gave. In January, 1850,

at the comparatively early age of fifty, Waghorn died, having only just been granted a pension, which was small in amount and procured with difficulty for this public benefactor. No wonder the projector of the water-route should speak with tender sympathy of the projector of the overland journey ; and there is something touching in the picture of the projector of the Canal watching thoughtfully at Alexandria the impassioned courier hurrying past him on his way, while he himself was maturing his own gigantic scheme.

It is impossible to speak of De Lesseps and his Suez Canal without recalling the story of the ill-fated Waghorn.

We now return to the former. In the year 1852 he had again recurred to the design, had drawn up a programme which he had translated into Arabic, and took the step of writing to an old friend, the Dutch Consul-General, to know what chances there were of its acceptance by Abbas Pasha, then Viceroy. "Since the year 1849," he wrote to this M. Ruysenaers, on July 8th, 1852, "I have never for a moment ceased studying this question, which so engrossed my thoughts when we were in Egypt together twenty years ago. I must own that my scheme is

still in the clouds, and I can't conceal from myself the fact that so long as I have only myself to believe in its possibility it amounts to its being impossible to get the public to accept it. We must have a basis to go upon ; to establish that basis I want your assistance.

*" The idea is to cut a passage through the Isthmus of Suez, which has again and again been proposed since the old historical times, and perhaps for that reason has been thought impossible. . . . I send you a memoir which I have drawn up on the subject, &c."*\*

Such was the modest fashion in which more than twenty years ago the projector opened his great scheme to a friend. Abbas Pasha was a voluptuary, devoted to Eastern pleasures, and not inclined to entertain such schemes. But already our projector was beginning to be stimulated by obstacles, and to show that fertility of resource which obstacles generated. One of the Fould family was then proposing to establish a bank at Constantinople ; and De Lesseps seized the opportunity to have the proposal opened to the Sultan. It was coldly declined, on the ground

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\* "Lettres, Journal, &c.," 1854-6, p. 1.



of its interfering with the prerogative of the Viceroy of Egypt. Seeing that it was hopeless, our projector laid the whole aside for the present, and, as we have seen, turned his thoughts to agriculture. Thus two years passed away ; and, as has been stated, he dismissed the subject from his mind, and devoted himself to farming and to building, just as we saw him at the opening of this volume. "Under these circumstances," he wrote, resignedly, "I must only let my project sleep. While waiting a more favourable time, I shall take to agriculture, and to the working of a model farm, in an estate of which my mother-in-law, Madame Delamaille, has just become the owner."\*

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\* "Lettres, Journal," p. 3.

## CHAPTER II.

### THE CONCESSION OBTAINED.

ON that August morning then, of 1854, he was engaged with his masons, and standing on the roof of Agnes Sorel's house, when the post arrived, and the letters were handed up from workmen to workmen till they reached the proprietor. In one of the newspapers he read the news of the death of Abbas Pasha and of the accession of Mohammed Saïd, his patron and friend of the old Egypt days. Instantly the scheme was born again, and his teeming brain saw on the instant the most momentous result from this change of ruler. Farm, house, and masons were all forgotten. In a moment he had hurried down the ladder, and was writing congratulations with a proposal to set off to Egypt. This event was indeed to have the most momentous results.

He had been a warm friend of the new Pasha, and relates himself how this intimacy had been contracted both with him and his family.

“While residing as the French agent accredited to Mehemet Ali, that great prince had shown me much affection on account of the memory of my father, who, when representing France in Egypt after the peace of Amiens, had contributed to the elevation of the Bim-bachi Mehemet-Ali-Aga, who had recently arrived from Macedonia with a contingent of a thousand men.

“The First Consul, Bonaparte, and the Prince de Talleyrand, Minister of external relations, had instructed their agent to seek amongst the Turkish militia for a bold and intelligent man to be named from Constantinople Pasha of Cairo, a title almost nominal, and who could serve to break down the power of the Mamelukes, who were hostile to French policy. One of my father’s janissaries brought to him one day Mehemet-Ali-Aga, who at that period could neither read nor write. He had left Kavalla with his little band, and sometimes boasted of coming from the same country as Alexander. Thirty years later, when the consular corps came to Alexandria to compliment Mehemet Ali Pasha on the victories of his son Ibrahim Pasha in Syria, the Viceroy of Egypt, turning towards me, said to my colleague: ‘The father of this young man was a

great personage when I was a very small one. He had one day invited me to dinner. The next day I learnt that some silver had been stolen from his table, and as I was the only person who could be suspected of the theft, I dared not return to the house of the French agent, who was obliged to send for me and reassure me.' Such was the origin of my relations with Egypt and the family of Mehemet Ali, and consequently of my friendship with Saïd Pasha. His father was an extremely severe man, who was annoyed at seeing him grow fat to a formidable extent, and who, to prevent excessive obesity in a child he loved, sent him to climb the masts of ships for two hours a day, to skip with a rope, to row, and to walk round the walls of the city. I was at that time the only person authorized to receive him. When he came to me he would throw himself on my divan quite worn out. He had come to an understanding with my servants, as he confessed to me later, to obtain from them secretly meals of macaroni, to make up for the fasting imposed on him. The Prince was brought up in French ideas with an impetuous head and great sincerity of character. Two years before he had been accused of conspiracy. He had been ill-treated by the Viceroy.

His family had been exiled. The discontented had gathered round him, and . . . . he had been obliged to escape as he could. He came to Paris, and lived at an hotel in the Rue de Richelieu, where I visited him. His situation, the welcome I gave him, and the recollection of his childhood, established between us from that moment a truly brotherly friendship.”\*

He speaks of the new ruler as intelligent and sympathetic, who indeed through all the progress of the enterprise showed the most impulsive devotion, as well as a most un-Eastern constancy. Much, too, must be allowed for the charm of the remarkable character which he had to deal with—a character whose sound principle ever was to have faith in himself.

An answer speedily arrived with an invitation to come and meet the Pasha at Alexandria in November. Full of hope and in delightful spirits, he wrote to his Dutch friend : “ I wish you to be one of the first to know that I shall be punctual at the rendezvous. How pleasant to think of our meeting once more in the dear old land of Egypt. But not a word to mortal about the Suez scheme till I come.”

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\* Lecture, April, 1870, translated by Sir D. Wolff.

On the 7th of November he had landed at Alexandria. He was lodged and treated sumptuously—a palace and servants and horses were placed at his disposal, and at his first interview was welcomed in the most affectionate manner. The Viceroy was on the point of starting on a sort of military promenade to Cairo, and insisted on taking his friend with him. Then followed dinners, fêtes, and receptions. But his hopes were rather damped by a remark which the Dutch consul recollected having heard the Viceroy utter before he came to power. His father, Mehemet Ali, he said, had once thought of making the Canal, but had given up the idea on the ground that England would object. The son added, that if he ever came to be Viceroy he would take the same view. "This was not encouraging news," wrote home De Lesseps, "but I am persuaded that I shall succeed."\* Nor did he neglect any means that were likely to have influence on that Eastern mind which he knew so thoroughly. On their way to Cairo he secured the good offices of one of the Ministers, who promised to prepare the mind of the Pasha for the reception of the project. The expedition was

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\* "Lettres, Journal," p. 11.

delightful. They camped every day, had music and feasting in the tents, and the Viceroy was gracious and even affectionate. But a whole week went by without any allusion to the matter.

At last the morning of November 15th came round. This was to be a remarkable day. Our projector had risen betimes. "The camp," he wrote in his journal, "was astir; the freshness of the air showed that the sun was about to rise; some rays of light were already breaking in the horizon. . . . All of a sudden I saw a brilliant rainbow display itself and spread across the sky from west to east. I own that my heart began to beat violently, and I seemed to see in this sign the true union of East and West, and a prophetic notice that the day was to be marked by the success of my scheme."\*

From this reverie he was awakened by the Viceroy, who greeted him affectionately. At ten o'clock De Lesseps quitted him, mounting a handsome horse which his patron had presented to him. A stone

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\* "Journal, Lettres," p. 17. A more prosaic reason than this brilliant omen is supplied in the Lecture given in 1870, where he stated that Zulfikar Pasha, the Minister, had promised to tell him the proper day when the Viceroy seemed in the best mood for the reception of the scheme.

parapet had been built round the tent ; and wishing to display the animal's action, and being himself a good horseman, he cleared the barrier at a bound, and galloped away down the hill to his own quarters. " This feat," he writes, " helped to gain the favour of those surrounding the Viceroy. The generals who came to join me at breakfast congratulated me, and I could see that I had risen considerably in their esteem."\* At five o'clock he returned to dine with the Viceroy. The latter was in spirits : he took his friend by the hand, which he detained for a moment in his own ; then made him sit down beside him in his tent. The moment had now arrived. It was an anxious one. Our projector felt, as he later confessed, that all depended on the way in which the matter was put before the Prince, and that he must succeed in inspiring him with some of his own enthusiasm. He accordingly proceeded to unfold his plan, which he did in a broad fashion, without insisting too much on petty details. He had his

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\* This little incident has been ridiculed in some newspapers, the turn given to it being " that he had gained the concession by leaping his horse over a wall." He knew what was most likely to impress the Eastern mind, and, as it will be seen later, all through his course he neglected nothing that might assist his plans.



Arabian memoir almost by heart, so all the facts were present to his mind. The Eastern listened calmly to the end, made some difficulties, heard the answers, and then addressed his eager listener in these words :—

*“I am satisfied ; and I accept your scheme. We shall arrange all the details during our journey. But understand that it is settled, and you may count upon me.”*

“Dinner followed, and as we were now both of one mind, we plunged our spoons into the same tureen, which contained an excellent soup. Such is a true and faithful account of the most important negotiation I ever entered on, or ever shall enter upon.”

That night, as we may imagine, he could not get to sleep. In this fashion was the first and most important step taken for the commencement of the grand scheme, which, however, he was not to see accomplished until fifteen years had gone by.

During the rest of the journey our projector did not fail to expound all the details, and succeeded in inspiring his patron not merely with his own faith but with his ardour.

They talked it over and over again, and weighed

all the obstacles. Towards the end of November they reached Cairo.

Arrived here, he was treated with even more distinction, and lodged in a handsome palace, which by an encouraging coincidence chanced to be the one in which the commission of savans more than fifty years before had discussed and reported on the project of the Canal. Twenty horses were at his disposal. Almost at once he was recommended by the Pasha to wait on the English Consul-General, Mr. Bruce, and open the plan to him. By this functionary he was received with decided coldness and reserve. He declared, however, that if it was to be a purely commercial enterprise he did not anticipate any objection from his Government, but that he had no instructions. On the 25th the Viceroy assembled all the functionaries and foreign consuls at the Citadel, and formally announced the project to them. He had entrusted the execution of the scheme, he said, to M. de Lesseps. A company representing all countries was to be formed, to whom he would grant the "concession" of making the Canal. Then, turning to Lesseps, he added in a friendly way, "That is our plan, is it not?" The latter, on this invitation, then proceeded to explain the scheme in detail, insisting

on the point that care would be taken not to interfere with the interests of foreign countries ; that every one should be allowed to share in it—an explanation that was received cordially by all, except perhaps by the English consul, who looked agitated and was still reserved. Here was the edge of that cold shadow which was rapidly to spread over the project, and for years thwart the sanguine dreams of the projector. From this moment the prosperous course of the scheme was to be mysteriously checked by this secret influence, but for which the Canal would have been happily completed much earlier than it was.

This announcement to the diplomatic audience is said to have been the result of a sudden inspiration, and no doubt, with an Eastern's timidity, he thought this the mode of avoiding the intimidation and intrigues which a more gradual mode of notification would certainly expose him to. Yet it may be suspected that this course was hinted to him by our skilful negotiator. The Viceroy was in great spirits on this auspicious morning. He even joked with the American consul, and declared that *his* isthmus would be cut long before theirs.

From this day the indefatigable De Lesseps may be said to have scarcely rested a moment. He was

to be in communication with every one of importance in Europe—engaged in this diligent *propagande*. Almost the first personage he appealed to was Mr. Cobden, to whom he wrote that he had heard that England was already opposing the project on the ground that it would favour too much the countries on the Mediterranean Sea. He laid his scheme formally before Mr. Bruce, and in a letter to Arles Dufour spoke of commencing the freshwater Canal, indicating the future course.\* On November the 30th, 1854, the “concession” formally drawn up was duly signed. The substance of this important document runs as follows :—It was proposed that the Company should consist of capitalists of all nations, and that the privilege should be an exclusive one, and all persons whose property was affected by the scheme should be indemnified by the Company. By Article I. the direction was confided to De Lesseps. By Article II. the director was to be always nominated by *the Egyptian Government*, and to be selected from the shareholders with the heaviest stakes in the

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\* “Lettres, Journal,” &c., p. 55. In the later plans this course was departed from for a time, but they soon reverted to the original line, thus showing how carefully matured had been all details.

concern. By Article III. the concession was fixed for 99 years. By Article IV. all land required for the Canal was to be granted free of charge. By Article V. the profits were apportioned—15 per cent. (from the net balance) to the Egyptian Government, 75 per cent. to the shareholders, and 10 per cent. for “founders’ shares.” The Egyptian Government were to receive the interest on such shares as they held in addition. By Article VI. the tolls were to be settled by Government and the Company, and no nation to be favoured. By Article VII. it was provided that should the Company make a Canal between the Nile and the ship Canal all the land thus watered and occupied should be theirs. The Company was to pay no taxes on those lands for ten years from the opening of the Canal, after which they were to pay the “dime.” When this lease was expired they were to retain the lands subject to the usual rates. These were the important provisions. The whole concluded with a declaration signed by Koenig Bey to this effect, “that the digging of the Canal was not to be commenced until *the Sultan’s leave had been obtained.*” Another Article showed that M. de Lesseps recollected that there were rival schemes in the field, and by this it was

stipulated that only the *direct* route should be adopted.

That it was a highly favourable arrangement for the Company there can be no doubt, but in view of the late transaction of the purchase of the Khedive's shares it will be noticed that one Article seems to favour the interests of this country in a most fortunate manner, it being declared that De Lesseps' successor is to be chosen from the persons who have the largest stakes in the concern. England, therefore, may be fairly allowed to claim, according to the Articles, to nominate the next director.

This concession was supplemented by another, the "Second Act," granted in the following year, and dated January 5th, 1856.\* In the preamble it was stated that M. de Lesseps considered the first grant rather too general, and the affectionate Viceroy proceeded to concede fresh advantages with an indulgent preciseness.

Article I. referred to the freshwater Canal, whose course was defined as proceeding from the Nile to the Canal, and from thence to the north as well as the south. By Article II. four-fifths of the workmen

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\* See the Official Documents.

employed were to be Egyptians ; it was stipulated all who used the water were to pay a rent to the Company. It may be stated here that the freshwater Canal, which was merely incident to the grand scheme, is likely to prove almost as important ; at least as regards the country. By Article X. "all uncultivated tracts not belonging to persons" (a general definition), were handed over to the Company according to the plans subjoined. By Article XIII. it was entitled to work mines and quarries, and exempted from all customs' duties on the machinery, material, &c. it imported. By Article XIV. it was solemnly declared that the Canal was to be "a neutral passage," open for all, but subject to the dues and tolls. By Article XV. no vessel was to be favoured in this respect. By Article XVI. an ambiguity in the first concession was cleared up. Though the Canal, at the expiration of the ninety-nine years' concession, reverted to the Government, the Company were allowed "to renew" for successive terms of the same length, at a gradually increasing percentage (*prélèvement*)—20 per cent. for the second year, 25 per cent. for the third, until 35 per cent. was reached, which was not to be exceeded. Article XIX. contains a definition of the "founder"

shareholder, who was to be a person "who had contributed by work, money, or studies," towards carrying out the enterprise; and finally, by Article XX., De Lesseps, "our friend," was to be the president founder for ten years from the completion of the Canal. Such were the privileges accorded to the new Company. There can be little doubt but that the present Khedive would never have granted such terms; and, indeed, no one could have anticipated that the result would have benefited Egypt so rapidly, as the projector was soon to learn.

When the English consul heard of this step he was surprised out of his reserve, and told the Viceroy plainly that "*he was going too fast.*" The latter replied with spirit, that he could not imagine for a moment that a step which was clearly in the interests of civilization could be opposed by any State. But, he added, significantly, should any agent formally object, under instructions from his Government, he should require these objections to be put in writing, so that he should have it in "black and white," and *faire son dossier*. This was no doubt a suggestion of De Lesseps, who was prepared at all points, and whose fertility of resource was wonderful. By Christmas he had started on an expe-



dition to explore the ground more minutely. He was accompanied by two French engineers of reputation, who had long been settled in Egypt, and had received high honours. These were Mougel-Bey and Linant-Bey. They had been engaged on hydraulic works connected with the "barrage" of the Nile, and had already considered the subject of the Canal.

On Christmas-day he was at Suez, then a miserable squalid town of three or four thousand inhabitants, encroached on by the desert. No one would then dream of the busy port, with its docks and workshops, which has taken its place. He was absent about three weeks, and the result of their investigation was that the Canal was perfectly feasible. All this while he was planning and mapping out the details of his enormous enterprise, laying down fixed principles, from which he was determined not to depart. His patron, whose affection and confidence in him seemed to increase each day, insisted again and again that he (De Lesseps) must be the sole moving and uncontrolled spirit of the whole. Future schemers will, indeed, envy this fortunate and privileged being who enjoyed the protection of so magnificent a patron. When the ques-

tion of contributions came to be settled, the Viceroy told him that it would be left to him to fix his share. As for the preparatory expenses, he had a sum of a hundred thousand pounds lying by which he placed at his friend's disposal for the preparatory expenses.

Thus supported it was no wonder that the exceptional advantages of the scheme should begin to attract notice. The crew of finance companies and syndicates, already beginning to scent profits, began to tempt him with offers of co-operation. But he was firm. He and the Pasha and a vast number of humble but *bonâ fide* shareholders were to be the strength of the whole. "My ambition," he wrote to France in January, 1855, "is to be the sole hand to guide all the complicated threads of this enormous enterprise until the time when it shall have strength to advance of itself. I do not desire to receive conditions from any one—in fact, I mean to impose them all myself. I well recollect Mehemet Ali, when I was a young man in Egypt, saying to me, 'Always keep this in mind, my young friend: when you have any important scheme on hand, depend on yourself alone. If you have a partner there is one too many.'" It is certainly true, as he himself owns, that he might have taken his concession to Paris—have entered into a

combination with three or four of the great bankers, and by a successful "*operation*" have netted vast profits. It is evidence of his earnest purpose and enthusiasm that he did not lend an ear to these charmers. From the very first, too, he set himself to the task of conciliating every interest which he thought might be hostile—writing to Mr. Cobden, to the French Emperor, and entering into relations with the Press of Europe. But he could not conceal from himself that the prospect was scarcely encouraging.

The Viceroy had opened the matter to the Porte. But the Vizier had not yet thought fit to consult the Sultan's council on the matter. The great journal—the *Times*—had already begun to thunder against the project, and treated as Quixotic the idea of an entrance at Pelusium being kept open. The tradition runs that in those days—strange as it may now seem—a leader in the *Times* was a nine days' wonder to be discussed and admired at dinner-tables and in public places. Its opposition was therefore most significant. There was a large number of English at this time in Egypt more or less connected with the Cairo railway, which was then being busily prosecuted, and it was natural that

they should consider the Canal as opposed to this scheme. From their lips came language of distrust or hostility, which found an echo in England, though Stephenson, the engineer of the line, affected to say that he discouraged all opposition to the new enterprise.

Under these circumstances our projector determined himself to hurry to Constantinople, and by his own marvellous energy quicken the lagging wheels of the Turkish councils. He arrived there about the middle of February, 1855, supplied with warm letters from his patron, and with Reports of all kinds. But he little dreamed of all he was to encounter there.

This engineer had already, in 1847, explored a portion of the country with a view to using the Nile as a waterway across the isthmus, supplementing it by a new artificial channel, but had rejected the idea as impracticable, which such a scheme certainly was. Later, it will be seen how, by a curious fallacy, he transferred his disbelief and hostility to a plan of a totally different character, such as the present Canal was.

## CHAPTER III.

### OPPONENTS AND REPULSE.

**R**ESCHID PASHA was then Vizier—a name familiar enough during the Crimean War, now almost forgotten; and as we have seen, the Court was the scene of that absurd struggle for influence which raged principally between the envoys of France, England, and Russia. There could be no apparent advantage in the victory when gained: it seemed to be a matter of prestige that the old tradition had been maintained with much spirit and intrigue; and for the present victory rested with the English, or rather with Lord Stratford de Redcliffe. This imperious envoy, however, seemed to take the matter out of the circle of mere intrigue, and to find the interests of his country in a sort of protectorship of a feeble State. “How to negotiate”—it is Mr. Kinglake that gives this portrait—“with a perfected skill never degenerating into craft—how to form such a scheme of policy that his country might be brought

to adopt without swerving ; and how to pursue this always, promoting it steadily abroad, and gradually forcing the home Government to go all lengths in its support, this he knew ; and he was moreover so gifted by nature, that whether men studied his despatches, or whether they listened to his spoken words, or whether they were only bystanders caught and fascinated by the grace of his presence, they could scarcely help thinking that if the English nation was to be maintained in peace or drawn into war by the will of a single mortal, there was no man who looked so worthy to fix its destiny as Sir Stratford Canning. He had faults which made him an imperfect Christian ; for his temper was fierce, and his assertion of self was so closely involved in his conflicts, that he followed up his opinions with the whole strength of his imperious nature. . . . As though yielding to fate itself, the Turkish mind used to bend and fall down before him.\* The spirit that had baffled Menschikoff was not likely to brook opposition from a French projector. At this moment he was in his haughtiest mood, and it is evident, from the caution of the other Ministers, that his

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\* "Invasion of the Crimea," i. III, 112.

power was unbounded. The various envoys of Spain, Austria, Holland, &c., secretly assured the promoter of the Canal of their sympathy, but seemed to hint at the hopelessness of his task. His own Minister, Benedetti—whose luckless star was later to associate him with the disastrous negotiations of 1870—shrank from encountering the terrible English Envoy, and recommended discretion. He had discovered, or fancied he had discovered, that the ground was open, that no engagements hostile to the enterprise had been made. All the Ministers, and the Vizier in particular, were for the scheme, and wished to gratify the Viceroy. But they were kept in awe by that stern power, the “Sultan Canning,” or “Abd-ul Canning,” as he was called, who was vehemently against the project. The Dutch, the Austrian, and Spanish Ministers lent him their aid: and indeed it must be said that the first two countries all through actually associated themselves with the project, officially investigating it, and forwarding it in every way.

De Lesseps first waited on the Vizier, when he was received favourably and explained his plan. He pressed him with a number of arguments, notably urging that in the case of the Cairo Railway no

authorization from Constantinople had been thought necessary, and artfully taking care to throw in some topics to excite a jealousy of the English envoy—alluding “to the *personal* hostility of an agent who by his overbearing conduct really outraged the dignity of the Sultan himself.” He presently had the satisfaction of discovering that Lord Stratford had received no instructions from home; and that so far he was merely gratifying his love of domineering, and an instinctive dislike of the French; but that his unscrupulous temper would not shrink from acting precisely as if he was supported at home.

An interview with the Sultan followed, and a very gracious reception. He was told that the matter was before the Council, whose answer might be expected in a few days. He might now fairly think of returning home, having accomplished all that he could reasonably hope for. But weeks passed away. On the eve of his departure, on February 24th, he unexpectedly learned that the decision arrived at was simply “that the scheme should be reconsidered by the Council; that they desired to have further information before deciding,” &c., which amounted to the laying aside of the whole question.

It seems that what had taken place was this. The



Council had met on Feb. 23rd to consider the matter, and, it was reported, was inclined to ratify the project, when the English Ambassador, having no precise instructions from his Government, produced an old letter addressed to the Egyptian Consul-General by Lord Clarendon, in which that functionary was directed to urge upon the Pasha the difficulties of the scheme, and the necessity of waiting till he learned the opinions of the other Powers interested. Of which weapon the Ambassador made such good use, that he succeeded in frightening the Council, who declared that it must have further information before deciding. On this news our projector determined to remain at his post. He was no doubt surprised at receiving an invitation to dinner at the English Ambassador's, quite *en famille*, when the host relaxed, and declared that had this "talking the matter over" taken place earlier, it would have removed a world of difficulties.

Nothing is more characteristic than this scene. The skilful diplomatist was frank, professed to be anxious for more information, and begged that all the papers might be sent to him. He declared that he was not pledged to any course, for or against the scheme. Any opinions he might have uttered were

his own. At the same time he threw out this suggestion—Why not transfer the settlement of the affair to London? Such a course might smooth away the difficulties. The influence of that country might do much. But De Lesseps absolutely declined. One of the Ambassador's speeches was—"M. de Lesseps, all that you say is quite sound; and, if you succeed, the scheme is grand enough to bring you credit and honour. But it is not to be thought of for a hundred years to come. *It is inopportune.*" To which our projector replied with spirit—

"My lord, if it seem inopportune for you, who are against my scheme, it is perfectly opportune for me, who am for it. If it be so useful and is to do me honour, why put it off for a hundred years? At that rate I shan't live to see it; and as I have entire faith in its being carried out speedily, I am anxious to see it done."

Delighted with his reception, and fancying that he had made an impression, he wrote eagerly the next day, saying that "the interview had removed impressions which he owned had not been favourable. Another talk would make everything *couleur de rose*—so he would call on the next day about one o'clock

at the English Embassy." The answer received to this airy proposal showed him that his pleasant fancy had outstripped his reason : and that he had been weak enough to accept the easy nothings of the drawing-room for more than they were worth.

" I write to you thus early," so ran the letter of the haughty Ambassador, " as well to acknowledge receipt of the papers sent with your letter, as also to request you to choose some other occasion for the visit you propose. Business which I cannot put off prevents me availing myself of the offer you were good enough to make.

" You are right in crediting me with a wish to be better informed as to your scheme—a wish that I always feel in the case of any important enterprise that touches the interests of more than one nation, and which, however attractive in theory, is open to various opinions as to its practical merits.

" You have sufficient good sense and knowledge of the world to see that I may not go further. The different points that you have touched, in a manner delicate and flattering as regards myself personally, belong altogether to the domain of higher politics (*la haute politique*). In the position that I hold,

individual independence has its limits—must sometimes give way to official considerations.”\*

This was very different from the *dégagé* tone of the dinner-party. The Ambassador, it was clear had determined that the Canal was not to be. Moreover, his haughty spirit could not brook that any scheme of the kind should be attempted without his sanction: it was sufficient that it was introduced under French patronage, which he had fought and crushed at the Porte, to make it odious in his eyes. What seems to support this view is, that De Lesseps was repeatedly assured by Lord Clarendon and other Ministers that the Ambassador was acting without instructions; though, of course, not *against* instructions—an almost amusing finesse of politics. The views of such an authority would naturally be accepted, and it seemed the most diplomatic course to let it assume the shape of some local question in which the Government at home might affect to have no concern. He found a sympathizing supporter in the old-fashioned anti-Gallican prejudices of Lord Palmerston, and when a Conservative Government came into power, it was a less embarrassing

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\* “Lettres, Journal,” &c., p. 129.

task to accept than to reverse the old Turkish policy.

On the 28th the Council met once more ; and in the morning the spies of the French Ambassador reported that the English Ambassador and the Vizier had been closeted for three hours, and had concerted a scheme for further delay. Reschid Pasha communicated the result of the deliberations of the Council to M. de Lesseps, which was that three members had been delegated to examine the details of the plan with its author. This, which was a mere subterfuge, our projector declined ; and he took leave of the Porte, seeing it was hopeless to think of prosecuting the matter further, for the present at least. The Vizier, he saw, dared not resist the Ambassador by whose influence he retained his place. With characteristic Eastern duplicity, he affected to deplore this slavery, declaring that the French influence would be far more acceptable at Court. This was but the opening of the game of deception which was to be carried on by this emasculated Court for many years, and whilst English and French interests were played off against each other successfully.

De Lesseps had only the comfort of taking with

him a complimentary letter, in which our projector received high praise, and in which his Canal was described as "a most useful scheme." It was also spoken of as a most "interesting enterprise." These empty phrases, however, were treasured up and turned to excellent account. When exasperating excuses were protracted through many years, his voice was heard again and again protesting that this was the scheme that had been approved by the Sultan and Court, and described as "one of the most useful and interesting."

Checked for the moment in this direction, De Lesseps hurried back to Egypt, to reassure his protector, who presently received a communication from the Turkish Court, discouraging the project in every way, chiefly warning him against incurring the hostility of England, and the folly of throwing himself into the arms of France; to which the Pasha made an angry reply, taunting the Ministers with being in terror of Lord Stratford de Redcliffe's menaces. De Lesseps then proceeded to Paris, enlisted the support of the correspondent of the *Times*, Mr. O'Meagher, and it must be most flattering to the great journal to see the enormous importance attached by foreigners to its opinion, The simple letter which this gentleman

was induced to write was hailed as one of the grandest accessions of strength the scheme had yet received. The projector then enlisted the support of the Duke of Brabant, of Thiers and Guizot—hurried to Paris, secured the undoubted influence of his connexion with the Empress, and contrived that the Emperor should have a conversation with Lord Cowley on the matter. At that time all Europe hung upon his utterances, and what so great a potentate favoured was not to be dealt with in such jaunty fashion. Indeed, it becomes quite easy to follow the tactics of the English Ministry, which do credit to the traditions of the old tortuous school of diplomacy. In the face of this French alliance, it was contrived that the opposition should be shifted to the personal hostility of the Ambassador, which the Cabinets did not pretend to control.

This will be seen from the next step in the proceeding, when the Turkish Ministry, pressed in one direction by France and the Viceroy, who was ever lavish of his presents, and checked by the English envoy, at last in March or April, 1855, directed M. Musurus, its representative at London, to ask for Lord Clarendon's views. The latter entered on the subject, and repeated the conventional objections to the scheme—

above all, resting on its "inopportuneness." The Turkish Minister declared that it was for the advantage of the world. "In that case," replied Lord Clarendon, "if it is to be purely European in character, and if all be asked to subscribe, England will be represented also, and we can make no further objections."\*

It will be presently seen what were the real views of the Cabinet, and how embarrassing it was to have the appearance of opposing a work that was to be useful to all the world on purely selfish grounds. The difficulty, too, of obstructing an object that was heartily favoured by the greatest potentate in Europe, was a fresh embarrassment, as will be seen from what next occurred.

When the scheme was first broached, its news had been telegraphed to the French Ministry, by whom it had been favourably received. The day following, December 14th, Lord Cowley hurried to M. Drouyn de Lhuys to ask for particulars, above all to find out whether it had been supported by the Government. The Minister replied that he had been in utter ignorance of the whole until the receipt of the news—

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\* "Lettres, Journal," p. 179



but added, that he would be glad to lend it all his personal support, and that he was delighted to hear of it.\* The English envoy then repaired to the Emperor, who affected to speak coldly of the project. But the Empress, a connexion of De Lesseps, had thrown herself heart and soul into the project, and it was reported that the Emperor had declared to her "*L'affaire se fera.*"

That cautious spirit, however, proceeded with extreme reserve, and directed his representative at London to open the matter to the English Ministry, declaring that he himself would consult the proper persons on his visit to London, which was shortly to take place. One circumstance, too, favoured the projector. A diplomatic squabble had broken out at Constantinople, owing to the contents of some letters of the Vizier having transpired, in which that shifty Turk had spoken with scant respect of the Emperor. This led to his fall, and was of course a rebuff for

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\* This is described as "a dignified retort." French diplomacy was always singularly sensitive as to all that concerned Egypt; and readers will recal a reply made by M. d'Haussez to an English Ambassador, who came to inquire as to the proposed occupation of Algiers. This took the shape of a coarse phrase, borrowed from the markets or stables, but it was thought admirably dignified.

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the great "Abd-ul Canning." It now turned out, that all the time *he was steeped to the beard in Lord Stratford's waters*—the curious phrase of the Pasha's brother-in-law.

Meanwhile, as the scheme was now rapidly taking shape, Lord Clarendon found himself obliged to make further sign, and in a despatch to Lord Cowley, of the date of June, 1855, had to show his hand and for the first time declare officially what the English policy in the matter was to be. He urged that the Canal itself was visionary and impracticable, and "*physically impossible*" as an engineering work. Even if it were possible, it could only be done at such an extravagant outlay as would make it valueless as a commercial undertaking. From this he deduced the extraordinary conclusion that, as profit was out of the question, political designs were at the bottom of the scheme. But this argument is so remarkable for its candour, and so curious when it is read by the light of recent events, that it may be given here at greater length.

"Her Majesty's Government cannot conceal from themselves that this project is based on political antagonism on the part of France in regard to Egyptian politics—an antagonism which it had hoped

would have given way before the happy change that has latterly taken place in the relations of the two countries. So long as the supporters of each Government imagined they were forwarding the interests of their country, by crossing and checking the interests of those opposed to them, it was quite natural that the partisans of French policy considered it all-important to separate Egypt from Turkey with a view of interrupting England's communications with her Indian possessions. It was in this spirit, and to this end, that vast fortifications were constructed under the direction of French engineers all along the Mediterranean coast, so as to protect it against an attack from Turkey ; with this view the great works of the 'barrage' of the Nile were undertaken — purposes of irrigation being made the pretext, but which would be of no practical utility, save for contriving an inundation of the country for military purposes. The effect then of the scheme is to interpose between Syria and Egypt the physical barriers of a canal, long and deep, defended by fortifications, and the political one of a long tongue of land stretching from the Mediterranean to the Red Sea and given over to the possession of a company of strangers. Questions of the most

embarrassing kind are certain to arise between the country to which these strangers belong and the Porte.

“The policy associated with this scheme has long survived the policy which prompted the idea of the Canal. As for the physical obstacles, they are too well known to need repeating here. The sea at both sides is so shallow for an extent of three miles that enormous difficulties must be encountered.

“Moreover, to dig a Canal from sea to sea of a size to allow of the passage of vessels will be a most costly work, and as it will be constantly filling up with sand, great expense will have to be incurred for the purpose of keeping it open.

“For this reason it is doubtful if any outlay, no matter how great, can secure a Canal that will remain navigable, or accessible on either side. But it is all but certain that such a Canal, if they succeed in making it, will never be a remunerative work.”

Such was this remarkable despatch, which in every line showed Lord Palmerston's inspiration. Some infatuation surely tempted the English Foreign Minister to put on record the two prophecies just given. The whole was, it must be plainly stated, a tissue of prejudiced, futile objections. Not the

least folly was the prophecy as to the engineering difficulties, in which the promptings of Stephenson, then a Member of Parliament, were clearly to be seen. No one, however, would now accuse Lord Palmerston of dishonesty, though in a matter of politics he could be *rusé* as well as bold ; and it will be seen later that, with a Philistine frankness, he confessed that these objections were merely artificial and covered others. The explanation of the whole is a simple one. He had had long experience of the old-fashioned French policy, which held that French influence was to be supreme in Egypt ; and that a few years since, in the days of Louis Philippe, a French Minister had been ready to go to war in defence of the Pasha, then in rebellion against his suzerain. This dream of Egypt being especially French, has been completely dissolved by the collapse of 1870 ; but were the French Empire still flourishing, there can be little doubt but that it would have been in full force, and that the recent transaction of the purchase of the shares would have been held to have affronted French pride and French interests far more than did the nomination of a German prince for the Spanish throne. Lord Palmerston belonged to the old school of politics, which had

done battle with French influence in the Tahiti quarrel, and in other transactions, and he naturally viewed the Suez scheme as an incident to be treated in the same fashion.

Such then being the complicated state of affairs, and this declaration of war being openly proclaimed, our projector determined to encounter the enemy on his own ground. He at once determined to proceed to London, and appeal from a hostile Minister to a friendly people.

## CHAPTER IV.

### ENGLISH HOSTILITY.

DE LESSEPS had arrived in London by the end of June, 1855. His first act was to obtain an interview with the director of the *Times*, Mr. Morris, and the favour with which he was there received is a fair proof that it was the Government and not the public that was indisposed to his project. Mr. Henry Reeve, then, as now, editor of the *Edinburgh Review*, to whom he had been recommended by M. Barthelemy St. Hilaire, a member of the Institute, a savant of distinction and lately well known as the faithful friend and secretary of M. Thiers, encouraged him warmly, though the organ he directed was presently to show itself hostile. This, however, was merely preparatory. Furnished with a letter of introduction, the projector boldly presented himself to the Prime Minister, and with a certain *naïveté* that must have made his host smile, begged of him to discuss the matter with perfect

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candour, and without troubling himself with such arguments as he kept for the public. After giving this invitation the projector expounded his scheme at length. Lord Palmerston replied with characteristic *bonhomie*: "I must tell you frankly that what we are afraid of is losing our commercial and maritime pre-eminence, for this Canal will put other nations on an equal footing with us. At the same time I must own that we are not quite easy on the score of the designs of France. Of course we have every confidence in the loyalty and sincerity of the Emperor, but who can answer for those who will come after him?" An invitation to Cambridge House then followed. The French Ambassador, to whom he later reported this conversation, declared that these were not the true objections, but were merely put forward as pretexts; that therefore it was idle to continue "epiloguizing" on such a theme. That Palmerston knew what was behind. Certainly the bugbear of French designs on India could then scarcely have been urged with gravity. An interview with Lord Clarendon followed, who was almost as candid as his chief, though less blunt. "I must tell you," he said, "that the traditions of our Government are opposed



to the idea of a Canal across the Isthmus. And since I have gone into the question, I confess that my own ideas are unfavourable." Then after some compliments to the Emperor, whom at that moment everybody was careful to compliment, he gave a conventional promise that he would examine the question with care and impartiality.\*

Our projector in this English campaign never flagged a moment in his labours. He first prepared a statement, which he distributed broadcast over England, and forwarded to all the leading men, all members of Parliament, merchants, and shippers, accompanying it with an appeal from himself.† The most important "adhesions" he received were those already alluded to—viz., of the East India, and Peninsular and Oriental Companies, the former declaring that as regards "the important enterprise of the Canal, the directors took the greatest interest in the success of any scheme that would facilitate the means of communication between this country and India." The latter declared that the advantages were so evident, there could not be two opinions

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\* See "Lettres, Journal," &c., above quoted, p. 221.

† These two documents will be found in the Appendix, the latter dated Aug. 8, 1855.

on the matter, that if the scheme were carried out they must profit largely by it.\* All this time he was regularly reporting progress to the Empress, who was deeply interested in the scheme, and addressing the Emperor. He was also busy in arranging the great task of the international survey of the Isthmus, which was to inspire public confidence. In short, he lost not a moment, and his eyes were at the same time turned from London to the Court at Cairo, to Constantinople, Paris, and to the Isthmus itself. He was drawing up the statutes of the Company, and thus early had even fixed the present charge of 10 francs a ton. By the time he had left London, which was early in August, he had done good work. As yet, however, the wished-for ratification was not forthcoming at Constantinople; but he was so excited by the progress made as to ask the Emperor whether the English Ambassador was to be allowed to persist in obstructing the Pasha's plans. At the same time he was able to assert, by advices from Constantinople, that the opposition there was as obstinate as ever.

Meanwhile he had been pushing on the prepara-

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\* "Journal," p. 252.

tions for the first practical step in the undertaking—namely, a thorough survey of the line of the Canal by an impartial commission selected from the engineers of different countries. And accordingly, early in November, this international convention assembled. It consisted of Mr. Maclean and Mr. Rendel, well-known English engineers; M. Conrad, a gentleman who was engaged on the water staat or dyke system of Holland; Negrelli, director of Public Works in Austria, who already in 1847 had examined the question; with other persons appointed by the Governments of Italy, Prussia, and Austria. After a consultation a party started for Egypt to survey the ground, and it included Messrs. Maclean, Conrad, Renaud, Linant and Mougél Beys, the engineers, Mr. and Mrs. Senior, and Barthelemy St. Hilaire, who was now one of the officials of the Company, with some others of less note. A most interesting expedition followed, which occupied nearly a month.

“This congress,” M. de Lesseps tells us, “of learned men was convoked by a private gentleman, to meet at Paris on a third storey in the Rue Richempance.\*

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\* De Lesseps' present residence.

“ Most of the engineers were unacquainted with each other. They were the most competent men to be found, who together presented the greatest amount of practical knowledge. They had left their business, the direction of their works, with remarkable disinterestedness, to found the era of a new civilization. On the day fixed, at eight o'clock in the morning, they were all punctual, arriving by railway from Madrid, Amsterdam, Berlin, Vienna, and London. After introduction, we held our first sitting, at the close of which I could no longer doubt of the success of my enterprise. You may well believe, gentlemen, the congress of these distinguished men did not take place in a moneyed interest. No. Not one of these savants would even accept the repayment of his travelling expenses. They proceeded to name a sub-committee, charged with the study of the land in Egypt. This sub-commission, composed of five members, achieved its task, in the midst of every difficulty, with indefatigable zeal and devotion. On arriving in Egypt, it travelled over the whole of Upper Egypt. On leaving, the Viceroy waited for them at the barrage of the Nile. The Viceroy, who had his troops around him, in full dress, received the men-

bers of the Commission with the highest honours.

“For these I thanked him. I thanked him above all for having received them as crowned heads. ‘But,’ he said, ‘are they not the crowned heads of science?’

“He generously defrayed from his private chest all the expenses of the explorations, and the studies of the Commission, which travelled as far as the first cataract. These expenses amounted to three hundred thousand francs (12,000*l.*), for which he declined to be reimbursed when the Company was formed four years later. A frigate came to wait for the Commission at Pelusium, and on the 1st of January, 1856, we returned to Alexandria, where the Viceroy waited for us at the gates of his palace. When he learned that the Commission considered the Canal possible, by channelling the Isthmus from sea to sea, without having recourse to the water of the Nile, he threw himself into my arms, and showed the liveliest satisfaction.”\*

The question was examined in the most pains-

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\* “Lecture on the Suez Canal, 1870.” Translated by Sir D. Wolff.

taking fashion and from every point of view, and on the 2nd of January, 1856, being at Alexandria, they were enabled to report that the route by Alexandria was impracticable on the ground of the engineering difficulties and the expense; that the direct road was the suitable one, and offered no difficulties in the execution; that the ports at each end were well adapted for the Canal; and finally, that the expense would not exceed the six million pounds sterling at which the Egyptian engineers had estimated the cost. From this important date, therefore, the project may be said to have now taken an actual, consistent shape, and its success was all but assured. This was merely an expedition to collect facts; the real labours of the Commission were to be pursued at Paris, where all the details were to be discussed and the whole digested into a formal project.

It took nearly a year to arrange the Report, the Commission meeting on June 23rd, 1856. It was composed of the following members:—M. Conrad, Captain Harris (who had made many voyages in the Red Sea); M. Jaurès, afterwards Admiral, and distinguished at the defence of Paris; M. Seur, of Berlin; M. Lieusson; Messrs. Maclean and Manby; M. Montesino, Director of the Madrid Public Works;

M. Negrelli, Inspector-General of the Austrian Railways; M. Paleocapa, Sardinian Minister of Public Works; M. Renaud, Inspector-General of the department of the "Ponts et chaussées;" Mr. Rendel and Admiral Rigault de Genouilly, a functionary well-known under the Empire. M. Conrad, as belonging to the country *par excellence* of water-works, was appointed president; while Messrs. Manby and Lieusson acted as secretaries, the former being selected with a view to conciliate England. Two of the most eminent of the Commission, Negrelli and Rendel, died within the next three years. The Report appeared at the end of the year 1856, and was really of an exhaustive kind. It consisted of a volume with eleven plans and maps.

The reasonings of the Commission from the facts were remarkable for their sagacity and for the accuracy with which they were supported by the event. It is not necessary to analyse the Report in this place, as the plans recommended will be discussed when we come to deal with the works. It may be said, however, that they dealt with all the difficulties in the most exhaustive manner. They proved convincingly that the stock difficulty of a difference of level between the seas did not exist. As to what some

geological objectors asserted, that for a great portion of the route the cutting would have to be made through rock, by means of borings they had ascertained that there were but two kinds of ground to be encountered ; for the lower half, that is, from Suez to the Bitter Lakes, what was called "*argile*," or gravelly, and for the upper half, from the Bitter Lakes, mud and sand. The excavator could not desire more favourable material for his labour. Neither was there any danger of "filling up" from the flying sand—a favourite bugbear. They also rejected the idea of using the Nile itself, and, adopting that of "a maritime Canal," decided against the use of sluices at each end, as proposed by the Egyptian engineers, in deference to the popular fancy that the waters would stagnate in the Canal. It suggested that there should be no banks, at least only through the Bitter Lakes. For width it suggested from 240 to 300 feet *at the bottom*—most ambitious dimensions, based on the allowance of three lines of traffic. The expense was found to be too great, though there can be no doubt that later this uniform breadth will have to be adopted. They then discussed the delicate question of the entrances to the Canal, which, according to the views of hostile



critics, made the execution of the scheme hopeless. These difficulties were dealt with after a masterly and scientific manner, the truth of which has been proved by the result. The tides, winds, depth of water, "silting up," point of entrance—all these matters were discussed, and a solution proposed for every difficulty. Finally, the momentous point of expense was dealt with, and an estimate of about six millions and a half pounds sterling proposed. In short, nothing more satisfactory or exhaustive could be desired than this important report. No engineer or person of intelligence that studied their arguments but must have seen that the whole was a work perfectly feasible and desirable from every point of view. It closed with a forcible plea for the obvious advantages to all of a route which shortened a long and dangerous voyage by three thousand miles. This, it might be thought, needed nothing more than to be stated ; but by-and-by it will be read with amazement that the advantages of such an abridgment were gravely questioned ! This brings us to an almost grotesque if not humiliating episode in the history of the Suez Canal question, that from some of the most enlightened quarters of England should have come an opposition which can only be characterized

as ignorant and illiberal. It was while the Commission was engaged in exploring the Isthmus that an extraordinary article appeared in the *Edinburgh Review*, not merely conceived in a hostile spirit to the Canal, a tone it was quite entitled to adopt, but characterized by a display of elaborate ignorance on the subject that is almost unique. Not less remarkable was the dictatorial strain with which it laughed the whole to scorn, and dogmatically "proved," with a show of professional knowledge that was all astray, that the scheme was a mere piece of French "fancy work." A few specimens from this remarkable paper will not be read without a hearty laugh.

Firstly, as to the long piers which were to stretch out in the Bay of Pelusium, and form an entrance, and admitted to be a costly and difficult portion of the works. "According to the soundings, taken with great care by the German engineers attached to the Commission of 1847, a depth of twenty-four feet is to be found only at a distance of about four miles from the shore; but to obtain a depth sufficient to allow vessels drawing twenty-three feet of water to approach in safety in all weathers, it would be necessary to extend the pier of the proposed harbour at least *five miles*."

No Company could certainly find resources to make two piers of stone, each five miles long. The truth was, other soundings had been since taken, by the regular engineers of the Company, with the result that the longest pier need only be little more than a mile and a half, and the shortest about three-quarters of a mile long!

“The depth of the loose deposit may be eighty feet or eighty fathoms, or twice that quantity . . . it is a matter of calculation to find how many cubic yards of loose stones would be required, but as it is either loose sand or looser mud, it is impossible ever to guess at the amount required.” This, again, was proved to be wrong.

But the really amusing portion was the argument to prove that there would be no practical saving either of expense or of time by the new route! Here was the reasoning. The cost of sending goods by sailing ships would be *far more* by the Suez route, owing to the dangerous navigation of the Red Sea. But it will be said, why not use steamers? —to which it was replied “that it was questionable whether steamers will ever be able to compete with sailing vessels for goods traffic.” It is notorious that steamers have completely destroyed the trade of

sailing vessels. But let us note the conclusion drawn from this argument :—

“ As the English shareholders *will inevitably find that the route round the Cape is infinitely preferable for commercial purposes (!), we may rest assured that the Canal will never be executed* ; or, if it were opened, it would, as in ancient times, soon be closed again, *as it could never pay its working expenses.*” (!)

Noting that what is most delightful here is the complacent tone in which the unfulfilled prophecies are delivered, we pass to the proof that the overland route for goods and passengers will be shorter.

“ Let us suppose,” it goes on, “ an Indian steamer, A, to arrive any morning at Suez ; she telegraphs her arrival to Alexandria, where a vessel, B, immediately gets up her steam and prepares for sea. Within ten or twelve hours from this arrival at Suez, the passengers, mails, and parcels are on board the vessel at Alexandria, and steaming out of the harbour. The next day the disembarkation of the cargo commences. . . . All can be easily transferred to Alexandria in five or six days, and put on board a vessel, C, which there waits the arrival of the next steamer from India. By this means the passengers and mails save nearly a week compared with the

time it would take the vessel to coal and get through the Canal. . . . If M. de Lesseps' Canal were open a vessel might get through in three days."

Almost every single statement in this wonderful paragraph is wrong. Then follows an argument to prove that the merchant will gain nothing in reduction of freight, and the article goes on :—

"It seems almost needless to carry the argument further . . . . for the whole thing is based on a mistake and an oversight. . . . Lesseps and his engineers, the two Beys, all argue as if they were living in the time of the Greeks and Romans, or in those of the Venetians." . . . . "All this might be true if a body of French capitalists could be found who would of themselves subscribe the eight millions needed. The probability is, however, that it could not be undertaken without the aid of English capital." . . . . "The proposals for the Canal have not been entertained in this country simply because it is known that the difficulties of execution are far beyond the estimates, and *that it would neither shorten the passage to India, nor materially facilitate the intercourse between the mother country and its dependencies.*"

It is curious that in England all the great engineering works of foreign countries should have met

with this kind of jeering reception. Even the great project for the Submarine Tunnel between Calais and Dover, a scheme that will certainly be accomplished, was approached in the same distrustful spirit:—

“ But even if it were made to-morrow, is it certain that ordinary travellers would use it? The experience of the Alpine Tunnel would, at first sight, seem to give a triumphant answer to this question. But a tunnel seven miles in length is a very different thing from one nearly five times as long, where a breakdown in the middle would leave the travellers over fifteen miles from succour and assistance. Should the white chalk make a sudden dip, the excavation will be fruitless; should harder rocks make their appearance, the cost of piercing them may swallow up all prospect of profit. Indeed, the general financial aspect of the scheme is far from encouraging. Of course, the transport of merchandize will contribute its share; but it is precisely on this point that it is impossible to guard against ruinous competition. No doubt proper defensive works would suffice to guard against a *coup de main* by means of the tunnel itself; but if these were taken in rear, as they might be as regards England, by a

successful invasion on the east coast, what becomes of England's command of the sea ?”

These are the words of a great leading journal only a few weeks back ; and it will be observed that the same line of objection is taken as in the case of the Canal—not so much a doubt of the possibility of the excavation, as of the utility and the cost : points which only concern the projectors. When the work is completed, which it is certain to be, with the result of amazing traffic and the most perfect success, people will wonder how there could ever have been a doubt as to the matter.

To return to the Suez scheme. This *Edinburgh Review* attack made such a noise, that M. Barthelemy St. Hilaire was deputed to reply to it, which he did with good effect in the *Revue Britannique*.\* On the other hand, it was attempted to refute the Report of the Commission by a strange proceeding. The idea of a channel between piers five miles long had been confidently accepted as a proof of the Quixotic character of the scheme ; but the plain statement that one of average length was all that was needed, came on the opponents of the scheme with

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\* In the number for April, 1856.

a shock. The commander of the English corvette *Tartarus*, Captain Mansell, received directions from the Government to make regular soundings in the Bay of Pelusium, and was thus engaged from the 25th of April, 1856, to the 5th July. The result of these inquiries was given in a map published by Captain Mansell in 1858. It can hardly be said that this friendly act was performed in the interests of the Company, and it is not going too far to say that it was hoped that the result would have been very different.\* Neither was it so unnatural that the French should see in the grand scheme of the Euphrates Valley Railway, which was now revived and pressed on public attention, a deliberate attempt to destroy all the chances of the Canal. Abroad it was found extraordinary that the English Ambassador should have used all his influence to force from the Sultan a guarantee of five per cent. on this vast line, in spite of all his objections and protests. While he was thus interposing, the same influence was employed to prevent the Sultan's countenance being extended to the scheme of an

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\* It was a Liverpool newspaper, the *Daily Post*, that first called attention to this proceeding.



ally. It might not be difficult to find an important distinction between the two cases ; but foreign countries are content with a ruder appreciation, and do not care to make nice or accurate distinctions.

The seizure of the isle of Perim, two years later, was not unreasonably assumed to be connected with hostility to the Canal, and to be in the nature of a precaution—particularly as it was recollected that it had been also occupied at the time that Napoleon was in Egypt. It was of course left out of the question that the English had an overland route for which it was necessary to provide as carefully ; but, as we have seen, public opinion is always apt to assume that succession is equivalent to the relation of cause and effect or to absolute connexion.

## CHAPTER V.

### STRUGGLES.

**I**N nowise disheartened, our projector was now busily engaged at Paris, doing battle with all the powers of diplomacy. With unwearied energies he had established relations with the representatives of the leading Powers—first at Constantinople, then at Paris ; but though from some he had drawn a formal adhesion in writing, he was presently to find that this was qualified by words of caution and advice not to awaken the hostility of England. It is certainly to the credit of Lord Palmerston that, even in his old age, when it was so often stated that his proud spirit had died out, find in what wholesome awe he still kept foreign countries, who one and all shrunk from giving any direct support to this scheme, lest England should take umbrage. Prince Metternich alone had given our projector the warmest and most cordial testimony as to the importance and value of the Canal—a

testimony which he authorized him to make public, and other Ministers had been privately sympathetic. But now a favourable opportunity offered for obtaining political endorsement for the scheme. All the great Powers had representatives at the Paris Conference, then engaged on the treaty of peace, and as England was alone in her opposition to the Canal, a declaration in its favour might be obtained from the rest. Count Buol was actually authorized to bring the question before the Conference, and to press for its approval ; yet this statesman, after a conversation with Lord Clarendon, from which he gathered that he would strongly oppose the scheme, had to tell De Lesseps that, "*though assured of the support of the French, Russian, Sardinian, and Prussian Ministers*, he thought it better not to bring the matter on !"\*

De Lesseps had therefore reluctantly to abandon this plan, consoling himself with the reflection that it was for the best, as the English people would in time become more favourable, and the prejudices pass away. What a testimony is here to the prestige of England only twenty years ago !

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\* "Lettres, Journal," 1st series, p. 362.

Baffled, though not disheartened, he obtained an interview with Lord Clarendon, on April 13th, when he told him that he was about to apply to the English capitalists for support, and bluntly asked would the Government oppose him. Lord Clarendon, well-trained diplomatist as he was, affected frankness. "If we," he said, "ever had doubts as to the opportuneness of your scheme, we were not thinking of English commercial interests, but of the political safety of the Turkish Empire: we feared that it would give too great an importance to Egypt. As for fearing any commercial rivalry from France, we disclaim such an idea; we ourselves would be the people that would profit most." De Lesseps, in reply, expounded his design at considerable length, and concluded by asking directly whether the grant of the Sultan's firman would be still opposed by the Ambassador at Constantinople. Lord Clarendon's reply was characteristic: "It is not impossible but that we may come to some understanding. As you are going to London, see Lord Palmerston, then come and talk with me."

It will be seen that the English Minister did not put forward the same arguments as his chief, and this seemed to support the statement made by

De Persigny, the French Ambassador, that these were fictitious objections, intended to conceal others. The French Emperor was at this time in the flush of his power and prestige, receiving and entertaining the plenipotentiaries in his capital. At one of these soirées the Turkish Minister Aali Pasha came to him, and asked his opinion on the Canal question, adding that his master considered it one of the highest importance (which, indeed, it was to that much perplexed sovereign), and that he would be glad to learn the Emperor's views on the matter. The latter replied that he took the greatest interest in it,\* that he had studied it thoroughly, and that he did not consider that the objections made, particularly by England, were well founded. These he hoped to remove. But here again the general caution interposed—it would not do to hurry matters, as it might compromise the success of the whole. He trusted to time, and relied on the good feeling existing between the two countries. On which the Turk declared that his master favoured the scheme on the

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\* It was natural that the Emperor should be interested by the scheme, as he had occupied himself during one of his imprisonments in preparing a detailed plan for cutting the "fellow" isthmus of Darien.

whole, subject to some reserves on minor points, and certain precautions as to his rights of sovereignty (which was indeed the difficulty of the whole question); otherwise the project was highly grateful to him.

Presently Lord Clarendon, who was also present, was surprised by the Emperor's entering on the subject, and after telling him what the Turkish Minister had said, asking him what *his* views were. The English envoy, though a little embarrassed, answered that it was too important a question for him to give an opinion upon without referring to his Court. Moreover, the scheme was wholly visionary, and impossible to carry out. The Emperor admitted that an opinion was not to be given off-hand, but maintained that it was feasible, and that scientific men had declared that it was. Lord Clarendon continued to maintain his opinion, when the other put it to him in this way. Assuming for the moment that it was feasible, he would like to learn the English view of the matter. Lord Clarendon declared that as regarded the interests of English trade no objection could be made, and that it would be for her advantage, but that the relations of Egypt and Turkey opened up a very delicate question. The Viceroy

had no power to make the Canal without the Sultan's leave. There this curious conversation ended.\*

Within a few days De Lesseps was in London, but could not obtain an interview with the Prime Minister until about a week. Alas ! he found that nothing had been gained ; the adroit Foreign Secretary had merely shifted the responsibility from his own shoulders. He found Lord Palmerston in the same mood as before, almost cynically frank in his confession of dislike and opposition. He listened to a written statement of the conversation with the Foreign Secretary, and then, with characteristic directness, did not scruple to put forward pleas inconsistent with those of his colleague, and sometimes with his own. " His language," said the projector, " was the most contradictory, incoherent, and, I may say, the most *stupid* you could imagine. He began to speak of the French intrigues in Egypt against England—that they could be traced back to the time of Louis Philippe, whose gold helped to set up the fortifications at Alexandria. The Canal was only a

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\* "Lettres, Journal," &c, p. 383. De Lesseps must have learned it through the Empress, with whom he corresponded, and who was eager for the scheme.

sequel to this vicious system. He then turned aside to dwell on the visionary character of the scheme and the physical impossibility of such a Canal ever being made. "All the engineers of Europe might say what they pleased. He knew more than they did, and their opinion would never make him change his one jot." Then he rambled off to the serious political inconveniences to both Turkey and Egypt if the thing were carried out. And he wound up by telling his listener with the utmost frankness *that he would oppose him to the very end!* "I declare," says De Lesseps, "that at times I doubted whether I was listening to a maniac or a statesman. Not a single one of his arguments would bear serious discussion for a moment." The projector made some formal replies, but he saw that he had to do with a "*parti pris*," and was only losing time. All he reaped was to make what use he could of such profit as there was in knowing that he had an open enemy to deal with.\* This scene is admirably characteristic of this veteran English Minister, and shows of what kind was his plain method of dealing with foreign questions. Nothing more effective could be conceived,

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\* "Lettres, Journal," *supra*, 377.



and he had no doubt learned it in the school of Castlereagh and Pitt.

In London De Lesseps did not lose any time, and was treated with much distinction. He was presented to the Queen, and had a long conversation with Prince Albert on the subject, who told him that the Duke of Brabant—the present King of the Belgians—was greatly interested in the project. The Geographical Society entertained him at dinner, and listened to his explanation of the project. After this he returned to Paris. His work had hardly advanced. Indeed, difficulties of the most stupendous character presented themselves. The diplomatic struggle alone would have been enough to engross all the energies of another man, and yet he was now preparing to encounter the physical difficulties of the formation of the Company and the construction. Another danger came from the Viceroy himself, who was being worked upon by intriguers, and who, growing disheartened by the persistent opposition, showed signs of wavering. This was enough to bring our projector to Alexandria, where the fascination he always exercised was sufficient to reassure his patron. But as soon as he had left he was to learn that he had again begun to have misgivings. "I hear,"

wrote De Lesseps to a friend at Alexandria, "that the Viceroy is harassed to death by intrigues against the Canal. All my letters report the same story, and those from Constantinople describe the exertions of the English Embassy to sow distrust between the Sultan and the Viceroy. I see the necessity of at once hurrying to Egypt to reassure our Prince." Accordingly, within a fortnight he was once more at Cairo. But he found everything looking gloomy. "As soon as English politicians perceive the favourable tendency of our affairs, their agents omit no means of damaging us, even going so far as to threaten the Viceroy with forfeiture. They even try to make him out a madman. I had been honoured with the same compliment at the time of my mission to Rome. I endeavoured to encourage the Viceroy, telling him that he had nothing to fear; that I had sounded public opinion in England, and that it was on our side. But nothing succeeded. I found him discouraged, ill, and irritated beyond measure. The blood flew to his head. At length he told me one evening that he could no longer resist all these worries; that attempts had been made to tamper with his troops, whose officers were Turks, and to excite them to desertion. I pointed out to him that as

nothing which went on in the desert was known to any one, we had only to do the work required by the Commission, and to take an excursion in the Soudan as far as Khartoum.”\*

This expedition occupied three months, but a portion of the time was devoted to the important project ; and, with Conrad, the Dutch engineer, the ground for the preparatory freshwater Canal was surveyed, and four hundred workmen actually were set to work. Thus a beginning had been made. Still the all-important ratification was not forthcoming, though fair words and promises were in abundance. The indomitable English Ambassador seemed to be more dominant than ever, and was pressing for “concessions,” such as Banks, &c., to his own countrymen ; while the French Ambassador, apparently cowed, was making no sign.

In this situation, where nothing seemed to advance, he determined on a bold step—to visit the very centre of this hostile influence ; to repair to England, and enter on a sort of mission, appealing from the obstructing Government to the traditional equity and fair play of the country itself. This distinction

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\* “Lecture,” 1870. Here De Lesseps’ own prejudices have interposed.

between the Government and the persons governed was probably founded on a national misconception, such antagonism being common enough in France; whereas in England the Ministry might be fairly assumed to represent the people. He was, however, justified in supposing that where commercial advantages were so clearly involved, a great commercial nation would not hesitate to give their sympathies in direct opposition to their rulers. Accordingly, about the 22nd of April, he started for London to inaugurate the great series of "les meetings" all over the kingdom. With what energy he prosecuted this arduous undertaking will now be told.

## CHAPTER VI.

### THE ENGLISH MEETINGS.

HE came provided with letters from M. Rothschild. His knowledge of English was of the most elementary kind, but this deficiency he also supplied by resolution and a determination to make himself understood: an effectual method of learning a language. He made his *début* at a banquet in the City, where he was well received, and then, in company with Mr. Daniel Lange, the zealous representative of the Company in England, started for Liverpool. He was received in the most cordial way during his progress, and held twenty-two meetings all over the kingdom. At Liverpool the Mayor undertook all the expenses, even to the issuing of the advertisements. "I scarcely expected," he says, "a favourable reception. But it was quite otherwise. In spite of the jumble of English words, which I drowned in French expressions, every one applauded, wishing to show that

they followed my meaning.”\* “We travelled,” he told another audience,† “like traders from town to town, with enormous maps, plans, huge books, reports, and programmes. As I knew not a soul at this Liverpool meeting, I was expecting to be interrupted by questions and exclamations. On the contrary, I was received in the most friendly way. . . . When I saw any one come forward, full of eagerness to make some remarks, I fancied that here was an opponent. Nothing of the kind: it was to thank me and compliment me. A question was put to me, was I not acting with the French Government? I answered, ‘*No connexion with the French Government! I am a simple citizen, acting for my own single interests.*’ On which there was great applause. Now in France, if you venture to tell the public that you are acting for yourself, no one will listen to you. But in England, the man who speaks for himself is always listened to. The personal interest of each one is touched, and he somehow thinks that his own cause is concerned.” His first step was always to wait on the Mayor and ask him to preside. He then saw the editors of the newspapers. He tells

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\* “Lecture,” 1870.

† “Entretiens,” 1864, p. 37.

with characteristic *naïveté* and some surprise how they never took any money! "Another time my candidate was presiding over a court of justice. After the first case was over, I begged him to receive me in his private room, and told him I wished to speak in public. 'All the world may do so,' he answered. He first wished to be excused from taking the chair, on account of his engagements; but, on my pressing him, undertook everything—the expense of summoning the meeting, room hire, and other details. It is thus things go on in England. It is easy to perceive that truth always results from discussion. The most absurd things are freely listened to, because they provoke good and useful explanations. Our high society is, to my mind, more irreconcilable than the poor of the lower class."\*

In these labours he was occupied for more than a month, visiting Manchester, Belfast, Dublin, Glasgow, Edinburgh, and every important town in the kingdom. Everywhere he was well received, and his project approved. Of course, as Mr. Gladstone later took occasion to remark, there was no more than courtesy towards a foreigner to be implied in this

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\* "Lecture," 1870.

reception ; but the campaign as a whole was adroitly planned, and the testimony of the great commercial towns was hereafter used with excellent effect in support of the scheme.

On his return to London in June he found that he had now an old hostile influence to reckon with. Lord Palmerston, he saw, was not altogether pleased with the success of "les meetings," though he affected to depreciate the value of such testimony. However, our projector received an invitation to one of Lady Palmerston's soirées, where he was no doubt a species of "lion." His host accosted him frequently, and the following curious conversation took place : "Well, so you have come over to fight us here. You have been trying to get up an agitation all over England, Ireland, and Scotland." To which the guest replied : "Well, my lord, I only availed myself of the liberty allowed by English law of speaking everywhere with perfect freedom on matters which might not be acceptable to the Government."

"*Lord P.* You know that I have made no secret of the fact that I am utterly opposed to your scheme.

*De L.* I firmly believe that public opinion must triumph over individual hostility. In fact, I reckon



on this hostility as one of the grand elements of success. This very morning I met a curious proof of this when I was consulting an eminent publisher as to the best way of bringing my book before the public. Among the expenses set down I found a very large item was to be for the organization of attacks upon it.

*Lord P.* Well and good. Then you can't be angry with me for my opposition. Our good relations wont be disturbed ?

*De L.* So far from that, I declare if I had a hundred thousand francs to offer you, and you were the sort of person that would accept, I would give them cheerfully, for every speech made against the Canal. *I look to your opposition as an engine for raising the capital."*

There was a rather cynical frankness displayed on both sides during this little scene. Nor was De Lesseps' last retort altogether ineffective. It was, however, according to our projector, met by a counter thrust of another kind. A meeting was to have been held at the Egyptian Hall on the following day, at which the Lord Mayor was to have presided. But it is stated the Prime Minister despatched one of his agents to him to prevail on him not to allow

the use of the hall for such a purpose, and to decline to preside. M. de Lesseps seems to say that the Lord Mayor himself informed him of the pressure thus put upon him. But the story seems improbable, and is no doubt founded on the natural misconception of a foreigner accustomed to see the direct action of the Government in every public step.\* But as De Lesseps had now challenged the enemy on his own ground, he could not complain if he was encountered with vigour and spirit. A reply to the *coup* of "les meetings" soon followed. Lord Palmerston was not the man to change his opinion or to yield before what he perhaps considered was a piece of charlatanry. Within a fortnight the matter was brought on in Parliament, and he was probably glad to have an opportunity of delivering to Europe the rather contemptuous opinion of the affair which he had privately communicated to the projector.

On the 7th July, 1857, a question was put by Mr. Berkeley in the House of Commons as to whether Government would not use its influence with the Sultan to favour the Canal. Lord Palmerston replied

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\* "Lettres, Journal," &c., 2nd series, p. 88.

that it declined to do so, "*for the simple reason that for many years it had been doing its best to oppose the scheme at that Court.*" He then proceeded to characterize it in terms that were studiously offensive. "It is an undertaking which I believe in point of commercial character may be deemed to rank among the many bubble schemes that from time to time have been palmed upon gullible capitalists." Further, it was "physically impracticable, except indeed at an expense too great to warrant any expectation of returns." This was sufficiently strong language. But he went on to say, "Its political tendency was obvious—to *render more easy the separation of Egypt from Turkey.* It is founded also on remote speculations with regard to easier access to our Indian possessions, which I need not more distinctly shadow forth, because they will be obvious to anybody who pays any attention to the subject. I can only express my surprise that M. Ferdinand de Lesseps should have reckoned so much on the credulity of English capitalists as to think that by his progress through the different commercial towns in this country he should succeed in obtaining English money for the promotion of a scheme which is every way so adverse and hostile to British in-

terests. That scheme was launched, I believe, about fifteen years ago, as a rival to the railway from Alexandria by Cairo to Suez, which being infinitely more practicable, and likely to be more useful, obtained the pre-eminence. M. de Lesseps is a very persevering gentleman, and may have great engineering skill at his command ; at all events he pursues his scheme very steadily, though I am disposed to think that probably the object he and some others of the promoters have in view will be accomplished, even if the whole of the undertaking should not be carried into execution. If my hon. friend the member for Bristol and his friends will take my advice, they will have nothing to do with the scheme in question."

The sagacity of the Premier is shown in the forecast displayed in the passage in italics. But he could not have reckoned that within six years from the opening of the Canal the country through which it ran should have become more important in the eyes of Europe than Turkey itself. The language used towards the projector was certainly harsh and undeserved ; the public instinct was more just, for it saw in him an enthusiastic projector, but not a vulgar speculator or promoter of a "bubble" company, as the Minister had described him. He naturally resented

this language, and from Paris addressed an appeal to the members of the House of Commons, in which he vindicated himself with some dignity. He asked, with reason, whether he had appealed for money. On the contrary, he had repeatedly declared that all he wanted was sympathy, and such support as was to be found in resolutions. The bulk of the shares, when the scheme would be brought forward, was reserved for France. He added that it was merely Lord Palmerston's age and situation that restrained him from using language of the kind that had been used towards him.\* But as we follow this not uninteresting struggle between the two men, we shall see that in spite of the advantages on the one side, the simple, earnest adventurer was quite equal to the contest. And almost the first advantage he gained from the attack was the valuable aid of that admission, so boldly and incautiously made by Lord Palmerston, "that they had for years been opposing the scheme at Constantinople." This he artfully pressed upon the French Court as being derogatory to French dignity, and it will be now seen with what good effect. In fact, it may be said ultimately to

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\* "Lettres, Journal," &c., 2nd series, p. 94.

have secured the protection of the French Government for his scheme. In a statement written to the Emperor, dated June 19th, he reminds him of an understanding that had been arrived at ~~between~~ the Courts—that if the English Ambassador exerted himself against the Canal, the French Ambassador was to be at liberty to work *for* it. He then asked, did not Lord Palmerston's confession amount to a violation of this agreement? After such an unfriendly and hostile course, were the French *now* to be restrained from pushing their interests at the Sultan's Court? Or was Lord Palmerston's leave to be asked, especially when the Sultan was favourable? \* Our projector, too, though he passed over the Premier's insinuations, was not inclined to tolerate such freedom on the part of others. Mr. Stephenson, the well-known railway engineer, was then in the House of Commons; and on July 17th, when the subject came on again, brought forward by Mr. Darby Griffiths, supported the Premier, declaring that he shared his opinion. It will be recollected that this engineer had made a hasty survey of the Isthmus, and had set his face

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\* "Lettres," &c., 2nd series, p. 98.

against the idea of a Canal, being attracted by the greater promise and simplicity of a railway scheme. Our projector fired up at this insult and flew back to London from Paris. Mr. Stephenson must have been disagreeably surprised when he was waited on by a gentleman, Mr. Manby, on the part of M. de Lesseps, with a letter requiring him to name two friends and to furnish a written explanation. He wound all up by saying that he had come from Paris to require it, and "placed himself entirely at his disposition." The reply was a disclaimer of anything offensive, limiting the sense of his remarks to the view of the question as a speculation.\*

It is certainly either evidence of the loyalty of the Emperor to the English Alliance, or of his suspicion that the Canal would not be for the political interest of France, that from the first he seems to have held back from the project. He and his Ministers, though they affected to wish it well, seemed disinclined to oppose the Stratford influence at Constantinople, and were always impressing caution on the French agents at the Porte. The prudent Thouvenel, one of the most respectable politicians of the Empire,

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\* See his *Amende*, "Lettres, Journal," &c., 2nd series, p. 112.

may have seen that the power of the English envoy was not to be shaken, and had the sagacity to abstain from a useless struggle. In a conversation with M. de Lesseps when he first waited on him with news of the concession, the Emperor seemed to dwell in exaggerated terms on the diplomatic dangers of the scheme. "You were right in not drawing the various Governments into your plans, and will do well to keep to that policy. Were I to support you now, it would amount to *war with England*, but once you have all the capitalists of Europe engaged, then every one will come forward to support you, and I myself will be the first." These sagacious words really explain the whole French policy during three years. Lord Palmerston's devotion to the French Alliance is well known, and he no doubt felt that the Emperor had made some sacrifice to humour his wishes. The line thus marked out by the Emperor was even the best for the interest of the scheme, as well as good for the interests of France. Nothing indeed is more characteristic of the miserable Turkish politics than the underhand fashion in which this question was dealt with.

The Porte itself could not view with satisfaction



so gigantic a project being set on foot by one of its vassals, whose effect would be to increase the influence or independence of the Pasha. This ratification the latter now affected to treat as a mere matter of form, and which he sought from deference to his suzerain ; both he and M. de Lesseps always urged that the Suez scheme was a mere local project, like the English railway from Cairo, for which the Sultan's sanction was not required. But there was an essential difference between schemes of this class and one which so completely transformed the physical configuration of the land as did the Suez Canal, and which, besides, brought it into altogether new relations with the rest of the world. And though the Hatti-cherif of June, 1841, which gave the Pasha many independent privileges, was often appealed to, still there can be little doubt but that the Suez plan was of an exceptional kind and concerned the empire as much as the province itself.

The situation was therefore a very favourable one for the Sultan, as he could always plead the well-known objections of England ; indeed, the powerful resolution of Lord Stratford would have made it impossible to yield. Never had England a more valuable servant than this imperious diplomatist,

who had the stuff of Clive in him. The French complained with mixed envy and mortification, that here was a man who never scrupled at a crisis to interfere in the name of his Government when he had no direct authority to do so, and whose proceeding was invariably supported at home ; whereas the French Minister was disavowed when it was found convenient. The English always kept the same imperious Minister undisturbed at his post, whereas the French Government changed theirs repeatedly.\* No wonder that a man with such power at his back and such ability to use it should have enormous influence at the Court, where it was stated that most of the functionaries were his creatures. The Ministers artfully affected to be favourable and even eager for the Canal ; but to France they urged the necessity of caution and the fear of giving offence to a great Power like England.

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\* Letter to Prince Napoleon, "Lettres, Journal," 2nd series, p. 136.

## CHAPTER VII.

### DEBATE IN THE HOUSE OF COMMONS.

**B**Y Christmas, 1857, De Lesseps was once more at Constantinople, and had recommenced operations by going round formally to wait on the various Ministers and great personages. The dragoman of the Embassy accompanied him, being formally charged to announce to all that the Government of the Emperor "was much interested in M. de Lesseps and his plans." There had been a slight quarrel between the French Ambassador and the Ministry—one of the ridiculous and absurd things incident to some barbarous Courts—and this was now to be "made up" by a device of reconciliation. Lord Stratford, it may be imagined, did not relish this new move in the game. Reschid Pasha was now in power, whom De Lesseps had met in Egypt, and this Minister affected to be interested in the Canal personally, that is, not "officially." On the projector's dexterously lamenting the despotism which

Lord Stratford seemed to exercise over them all, he rather warmly repudiated such influence, and frankly owned that a man of such powerful intellect and influence was naturally a valuable ally, and a strong support to his friends. "But why," he then asked, "don't you French exert your influence and pressure as England does? If you want to carry out your plans, you must exercise the same means they do." This plain speaking had not been lost on his listener, who now urged his influential friends in Paris to make exertions. Prince Napoleon persuaded the Emperor to give a partial support to the scheme, who declared that he "saw no inconvenience" in his Minister lending his sympathetic aid at the Porte. Here was revealed the same caution. Indeed, he had but recently met Lord Palmerston at Osborne, where, De Lesseps heard, it had been agreed that both Governments should abstain from an active pressure. The projector, however, could reckon on the support of the Empress and that of Count Walewski; the latter representing that ardent band of speculators and "jobbers" who found in the various operations of the Empire such a source of enrichment.

The English Ambassador had gone. De Lesseps gives a piece of gossip to account for this congé.

When the Emperor and Empress paid their visit to Osborne, the Suez question was discussed between Lord Palmerston and Count Walewski, when the former pressed that the French Government should join in opposing the scheme on the ground that it was hostile to English interests. As this could not be obtained, the old arrangement was renewed: that the respective agents at the Porte should be allowed to act independently, and that the Governments were not to interfere. Lord Palmerston's public declaration had indeed shown that this engagement had not been observed; so now, as an earnest of good faith, it had been determined to give the Ambassador a congé and change all the consuls in Egypt.\* But Lord Stratford de Redcliffe's last stroke before his departure was a clever one. He suggested to M. de Lesseps that as there were so many conflicting interests involved, some favouring, some opposing the project, it would be well that all should come to an agreement. What if the Sultan were to address a circular to all the various States asking them to come to this agreement as to their wishes, and that in the meantime the Porte would

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\* "Lettres, Journal," 2nd series, p. 148.

postpone all consideration of the matter? This device was surely a pretext to gain time. Yet he had so far persuaded many of his colleagues to accept it as a solution of an embarrassing question. But the French projector put it aside at once. He was then granted an interview by the Grand Vizier, whom he told frankly that he would look for something more than mere promises. He seemed to have produced some effect, and the old game of smiles and encouragement from the various functionaries set in once more.

Suddenly a piece of news went round Constantinople, that Reschid Pasha, the Grand Vizier, had died suddenly after drinking a cup of coffee. De Lesseps had been with him only the evening before, when a new proposal, suggested by Prince Metternich, had been discussed. The questions of the neutrality of the Canal, and of its execution, were to be kept distinct—one as the exterior, the latter as the interior question. All the Powers were to deal with the former, as bearing on the independence of the Sovereign of Turkey. The mere execution, therefore, became a matter entirely between the projector and the Pasha. The use to be made of the Canal

and its control belonged to Europe.\* The Austrian Minister at the Porte had received the most precise instructions to support the project in every way.†

There was a new Vizier, Aali Pasha, and all had to be begun again. He was a timid man, and had been at the recent Congress of Paris, where Lord Palmerston had spoken to him with decision on the subject of the Canal. Almost at once his caution and indecision were revealed. Notice of a question had been given in the House of Commons which would not be put for some weeks, and he would wait to hear the result. Nothing disheartened, our projector waited on him with a paper of instructions from the Pasha, the tone of which was dignified but decided. In it he protested against further delays, which were unfair to him, as he had been certainly encouraged to go on with the scheme, and had received congratulations from those in power at Constantinople. He added plainly that if the authorization was any longer withheld, he was prepared to go on without it.

Nothing, however, was done. The weeks and

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\* "Lettres," &c., 2nd series, p. 159.

† They are given in the "Lettres," 2nd series, p. 131.

months passed by, and he still lingered at Constantinople—not perhaps unprofitably, as he was decidedly bringing about a change in Turkish feeling towards the project. Perhaps some shame was felt at the state of undignified helplessness in which they were placed. M. de Lesseps learned for certain that Aali Pasha and Fuad Pasha (the late Minister for Foreign Affairs) really favoured the scheme, and that the Porte would throw no obstacle in the way. Here was something gained, though all preceding Ministers had in truth made the same declaration. However, the energetic projector had laboured so diligently—possibly in putting before them the view that the Canal would be made without, as well as with the consent of the authorities, that the question had advanced. Yet how vain were the rumours on which he was feeding will now be seen. He was almost driven wild by excuses and delays. In February, 1858, he learned from Cairo that the English consul, waiting on the Viceroy to thank him for allowing the English troops a passage through Egypt, hurrying to suppress the Indian Mutiny, had assured him that what he learned of the progress made at Constantinople was untrue, and that Mr. Alison, who was acting in the absence of Lord



Stratford de Redcliffe, had handed letters from Lord Palmerston to the Vizier, warning him against the scheme, and that the latter had engaged in writing not to grant the firman.\* The Viceroy replied that he had granted the concession ; that the matter was before the Sultan, to whom such declaration should be addressed. De Lesseps was thus to enjoy the alternations of hope and depression, and those turns of ill and good fortune which attend the adventurer.

Now came news from London that there was a new Ministry. The grand enemy of the project had fallen ! Nothing could be more welcome. This seemed now to open the most certain prospect of success. He might fairly summarize with some pride what had been the result of his exertions. "The condition of things," he wrote, "should be compared with what it was a few months ago when I arrived here. Then Palmerston had just given out that the whole was a Turkish question, and not an English one. I had to contrive, therefore, to shut him off from this loophole of retreat—his shifting the ground to Constantinople—where, having no support from our own agents, and as Lord Stratford was

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\* "Lettres," &c., 2nd series, p. 171.

backed by his Government, he would infallibly have beaten me. Had I been absent, he would certainly have contrived to have tricked the Porte out of some positive declaration against the Canal." As we have said, the whole was a very exciting struggle between the two men.

Vizier Aali Pasha, with the fickleness of an Eastern, almost at once directed the Turkish Envoy at London, M. Musurus, to ascertain what were the views of the new Ministry on the matter, "as the Turkish Government did not wish to take any step of the kind (*à l'insu*) behind his back." Lord Malmesbury told him that the Government had adopted the opinions of their predecessors on this point, and that they would continue the same opposition, adding "that he welcomed with satisfaction the declaration of the Porte that it would take no step without the approbation (*assentiment*) of England"\*—a reply that caused much astonishment at Constantinople—Lord Malmesbury's ingenious twisting of the meaning being truly characteristic.

The Turkish Ambassador was at once instructed to protest against this assumption, declaring that it had

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\* "*Lettres, Journal*," 2nd series, p. 174.

never professed to surrender its liberty of action in the matter ; it was merely from deference to a trusted ally that it had asked for an expression of opinion.

Mr. Lange, the acting representative of the Company in London, then entered on the scene, having an interview with M. Musurus, whom he pressed to require an expression of opinion from Lord Malmesbury ; while at Constantinople M. de Lesseps addressed the Vizier in blunt, haughty language, showing that he considered that the situation was changed ; and that he felt secure, assuring him that "the Suez Company, under all conditions, could only be their natural ally." "Be assured that my chief anxiety is to *ménager* the relations of Turkey and England in this delicate question ; and in this character of representative of the Universal Company, backed by the opinion of the whole world, I can assume a responsibility and take an initiative which perhaps the regular Governments, hampered by various considerations, would not be inclined to take on themselves."\* He ventured also in another appeal, dated April 4th, 1858, to alarm the Vizier with

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\* "Lettres," &c., 2nd series, p. 197.

the danger of losing Egypt altogether, alluding to a despatch of Lord Ellenborough's, when Governor-General, in which it was stated that England, to secure its influence, ought to have "one foot in India and *the other in Egypt*." He declared, moreover, that when he was in London direct overtures had been made to him by a person in office to the effect that if he was willing "to allow of England's holding Suez, and thus guarding the free passage of the Canal," all opposition would be withdrawn. This proposal he had repelled *inde iræ* on the part of Lord Palmerston.\*

Again his hopes rose high, when notice was given by the persevering Darby Griffith of a question in the House of Commons. On March 26th, 1858, the matter was brought forward, and Mr. Disraeli was asked, did the English Government consider it desirable to persevere in its opposition to the Canal now that all the nations of Europe favoured the scheme? The Chancellor of the Exchequer in reply, avowed that his opinion was that "*it was a most futile attempt, and totally impossible to be carried out*." Then, beguiled by a pleasantly satirical vein, which

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\* "Lettres," &c., 2nd series, p. 186.

is often prompted when anything visionary is being dealt with, he added that even if it *were* feasible, "the operation of Nature would in a short time totally defeat the ingenuity of man"—one more unlucky vaticination to add to so many others. As to the political aspect of the matter, he could not venture to say anything, it being of "so delicate a character." Still, though "the noble lord had given an opinion on that part of the subject, the Government had no evidence before them of the kind."

It is remarkable, however, that the wary statesman was careful to base these declarations upon the information of others. The scientific responsibility he devolved on Stephenson; and in closing his remarks he guarded himself even more carefully, saying that, from what he had been told, he was inclined to believe that the project would be unsuccessful, but that the moment had not arrived for pronouncing a positive opinion.

Mr. Disraeli added, fairly enough, that the House had nothing to do with the practicability of the scheme, or concern with the capitalists who chose to risk their money in it. This declaration threw all back, and again awakened defiance in the breast

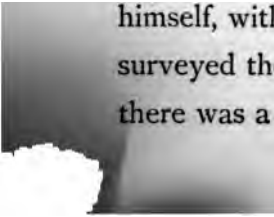
of our projector. He determined to set out for Egypt, seeing it was useless to hope for anything further at Constantinople. The only thing now was to form the Company, and brave "perfidious England." He was determined to give out that "the declaration of Mr. Disraeli had decided him to undertake the great enterprise." Still he felt that under the circumstances "it would be dangerous to put France forward." He would launch the Company: the very declaration of Mr. Disraeli would cause it to be taken up with ardour in France, &c. Suddenly a telegram reached him,—“A question is to be put in the House by Roebuck. Thus it will be seen that in spite of the Malmesbury tactics and of the *Times*, England wishes for the Canal.” That journal, indeed, was uttering the most contemptuous declarations as to the scheme, and in a leader declared that the scheme was represented in Egypt by a party of adventurers, full of hatred of England. This Company, it declared, would interfere with our interests in every way. England alone was interested in such a Canal, and if it was feasible “our engineers would have made it long ago.”

Meanwhile our projector was hurrying to London to be in time for the “Roebuck interpellation,”

which, on June 1st, 1858, brought on an animated debate in the House of Commons.

Mr. Roebuck made a warm and vigorous plea for the Canal, beginning by declaring that the honour of England was concerned, and that, by these proceedings, it had been dragged through the mire. They had nothing to do with the question of the impossibility of carrying out the scheme; the only inquiry was, was it opposed to the interests of England? and he concluded by moving that "This House is of opinion that the power and influence of the country ought not to be employed in obliging the Sultan to withhold his assent to the project."

After Mr. Milner Gibson and Mr. Griffith had supported the resolution, Stephenson, the engineer and member for Whitby, addressed the House. His speech remains a curious monument of ignorance and prejudice. That this is not saying too much will be plain when it is said that every one of his statements are without foundation. He began by stating that it was "*physically impossible*" that the Canal could be made. "It was forgotten," he said, "that he himself, with the engineers Talbot and Negrelli, had surveyed the ground in 1847, on the supposition that there was a difference of level between the seas, and



this they relied on to produce a current. They found there was no such difference, and therefore it became a mistake to talk of a Canal. It would be simply a ditch,"—a statement greeted with "Hear, hear!" from the audience. (The event has proved the contrary. There was a difference in the level of the seas owing to the tides and currents.) Mr. Rendel, the well-known engineer, was brought in aid, as approving the scheme. Yet his name was not to the Report. Mr. Maclean, another of the Commissioners, disapproved of the scheme. How could a Canal be dug eighty miles long without drinking water along its course? Again, there would be no saving of time; by rail the passengers and mails could get from Suez to Alexandria in eight hours. (It is a fact that even now passengers go by the Canal rather than by the railway.) He made no account of the important element of goods. It was proved later that Mr. Rendel approved of the whole, and had signed the Report, though he died before its publication.\* Water was found in sufficient abundance. It is to be feared that the whole tirade was dictated by prejudice rather than ignorance.

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\* See "Lettres, Journal," 2nd series, p. 260.



Mr. Fitzgerald, now Sir Seymour Fitzgerald, replied to Mr. Roebuck. He asked, Was it desirable that the whole traffic with India should have to pass through a narrow channel, which, if a war broke out, a single battery of cannon could effectually close? Glancing at the political grounds, he urged that the Egyptian coast was at that moment so fortified that a landing could not be effected. The Canal would be a barrier of defence against Turkey. Further, it was to fall into the hands of the French, who might not always be as friendly to us as they are now. Again, it had received no support from the merchants of Great Britain.

Mr. Milner Gibson followed, pressing for the production of the correspondence between the Government and other countries on the subject, and then Lord Palmerston took up the subject in his most "jaunty" style. The most favourable and most charitable way of judging the matter would be simply to state that, in his opinion, it was the greatest bubble that had ever been sought to be imposed on the credulity of the public. The meetings on which such stress was laid were not spontaneous, but were got up by the promoters of these foreign schemes for ends of their own. Even if executed, it would

not pay the expense of its construction. He denied that they had exercised pressure on the Sultan to make him refuse. The Turkish Government was wholly opposed to it. He endorsed what had been said as to the fortification of Egypt, and the use that would be made of the Canal for that purpose. More profound, however, were his concluding remarks, in which he stated that it could not be for the interest of the country that the access to our Indian possessions should be through a narrow passage controlled by a foreign Government. In these words is opened up the future English policy as to the Canal, which will have to be neutralized, or else transferred to England.

Then Mr. Gladstone addressed the House. He put the matter on the true ground, whether it was politic that the influence of the country was to be exerted at a foreign Court against the scheme ; and he urged that so discreditable a system should be discontinued. The pretexts that the scheme was chimerical, &c. were dishonest ; the truth being that the policy adopted was putting England in opposition to progress, and to the wishes of the other countries. He then refuted the theory that it would lead to the dismemberment of the Turkish empire, whose

power, he maintained, would not be affected by a Canal, or anything of the kind. With great force he argued that the advantages of the Canal would be all for England, that country which already, by means of Aden and Perim, controlled the Red Sea. "Which of the Powers," he asked, "will it be, who will really hold this Canal when it is once opened? Must it not of necessity fall under the control of the first maritime nation of Europe? England, and no other country, will be mistress of the Canal."

Mr. Disraeli repeated the statement that the English Government had not attempted to influence the Turkish Government; but put it in the same equivocal fashion that Lord Palmerston had done—viz., they had not interfered *because* the Turkish Government needed no prompting, being totally opposed to the scheme. He added, that he could see nothing in the attitude of the present or the late Ministry to prove that there had been any constraint put on the Sultan. This studied ambiguity, it will be recollected, is quite consistent with that double policy pursued at the Porte, the English Ministry holding aloof and allowing the Ambassador to act for himself. But De Lesseps' revelations of the *bascule* course pursued by both his Government and that of

England are confirmed by a remarkable passage in his speech. Mr. Disraeli went on to say that it had been stated about a year before that the French Ambassador at Constantinople was favouring the scheme. This no doubt was true. But he would only say that he had had frequent and recent communications with the French Government, who had frankly admitted the great difficulties of the scheme, and that it had no wish to interfere in the matter, beyond the extent that any Government would do in favour of an enterprise that could be supported by sound arguments and public sympathy. This statement produced hearty applause. He also alluded to the supposed support of Austria. All that was known, he said, was that Austria had declared that the scheme was not to be executed, and indeed could not, unless with the consent of the other Powers. This was a good specimen of the economy of political truth, as the statement seemed to convey that Austria was indifferent. The truth, however, was that she had supported it in the heartiest and most cordial fashion. He further insisted on maintaining a policy of reserve; and said, guardedly, that if it could be shown that the Canal had all the advantages claimed for it, considerations of

general policy might give away. But at present it was only in the stage of speculation.

Lord John Russell then spoke, declining to accept the statement that no influence had been used with the Turkish Court, and appealing to the extraordinary contradiction between Lord Palmerston's late, and present declarations on the subject. Mr. Bright also spoke, but, without expressing any formal opinion, pressed for the correspondence alluded to in the debate. Mr. Roebuck replied, and on a division his motion was rejected by the large majority of 228, in a House of 290 members.

Our projector was encouraged by this discussion, which he considered on the whole favourable to the prospects of the scheme, and in the first week in June he was back in London, and called on the French Ambassador. That rough soldier of fortune, Pelissier, received him with some sympathy, and the rather empty declaration that he trusted he would "not quit the world before the completion of the great work." Our projector frankly owned the discouraging results of his interview, summing them up thus categorically—viz., "1st. He showed himself very sympathetic. 2nd. It seems he has no instructions to wait on the English Ministry. 3rd. He

showed much complacency when I told him that I had merely come to London on my *own* affairs, in connexion with the Canal, and without any view to asking *his* intervention. 4th. My avowed intention of proceeding with the scheme in the face of the English opposition seemed to please him," &c.\* Unhappily, however, he had "no instructions from his Government" as to the Canal, and could do nothing. The Emperor, whose policy was founded on the fact of France taking the initiative in every political movement, was not quite satisfied with Lord Malmesbury's declaration as to the Porte not taking any step in the matter "*without the consent of England*;" it exhibited too great a wish to be dependent on one country. He took occasion, therefore, in one of his many harangues to reassure his subjects, and to allude to this question of "a firman for Egypt" in a way that caused some trepidation in the breast of the Turkish Ministers—one of whom, Fuad Pasha, when at Paris, humbly begged for an explanation from Count Walewski, which, however, was not afforded him.

The incautious and ambiguous declaration of Mr.

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\* "Lettres, Journal," &c., 2nd series, p. 263.

Disraeli had produced this awkward result. The Council of Ministers had met specially a few days after the debate, and decided that the Ambassador at Constantinople should press De Lesseps' proposals on the Porte, and that the Government should come forward with a proposition, addressed to all the Courts, for neutralizing the Canal.

But what above all favoured the scheme, was the recal of Lord Stratford de Redcliffe—the successful and implacable enemy of the whole. Yet he might solace himself with the complacent reflection that so long as he, at least, was at his post, the hereditary enemy could not advance, and that it was only after he had withdrawn that the task became easy. The futile opposition was, in fact, collapsing at all points before the steady perseverance of the sturdy projector. In vain did the party of Lord Palmerston and his friends give out that “the Vizier and his colleagues were fooling De Lesseps,” and that they were heartily opposed to the scheme. He had actual proofs in his hands of their goodwill, and of their wish to prove that the Porte was not anxious to throw any obstacle in the way. Other Powers of Europe, as we have seen, were taking a marked interest in the plan, and the projector was now put-

ting forward the not unreasonable argument that if one country was to have the privilege of compelling another Court to refuse its sanction to a project, other countries were quite as fairly entitled to use their influence in the contrary direction. The Ministers of the various Powers, Austria, Prussia, Russia, Spain, Italy, and the smaller States, had cordially endorsed all his proceedings, more particularly his final determination of what he termed "ringing up the curtain for the last act." On the whole, then, it must be said that English policy on this question had been neither skilful nor far-seeing, and was as imprudent as it was unsuccessful. The new Ambassador at Constantinople, Sir H. Bulwer, had brought with him moderate counsels and apparently a new programme. Perhaps the sagacity of Mr. Disraeli had seen that in the temper of Europe the attitude of hostility ought to be abandoned. He was on cordial terms with De Lesseps, whom he had met before in Egypt. He, however, like all concerned, could not depart from the favourite attitude of impassiveness. Boldness was accordingly the game to be played. Everything was growing more and more favourable. The Emperor of the French seemed to be departing from his neutrality, and though still insisting that no



pressure was to be put on the Porte, nevertheless allowed it to be seen that the scheme was favoured by the French people. The attitude of Austria helped to produce this change. Metternich repeated his old advice, that the Company should be at once organized and the money subscribed, and that then it would become a force that could not be resisted. Accordingly, by the end of August, 1858, our projector quitted Constantinople, and after being fêted at Trieste, Odessa, Venice, and other places, arrived in Paris to constitute his Company and issue his invitations for subscriptions. Aali Pasha, the Vizier, was lavish in assurance of goodwill, but frankly owned that he was helpless in the matter, but hinted once more at the necessity of pressure on the part of France as a counterpoise.

## CHAPTER VIII.

### THE COMPANY.

THE Company was now to be formally constituted and brought out. De Lesseps did not lack applications from the horde of pseudo-financiers and rich gamblers that bred and flourished under the Empire ; but he had determined from the outset that they should have no part in the enterprise ; he would not even allow the legitimate magnates of the stock exchanges of Europe to lend him their rather costly assistance.

“ I was advised,” he writes, describing an amusing scene, “ to open a subscription at Monsieur de Rothschild’s. I had rendered him some services while Minister at Madrid, and he was good enough to recognise them.

“ ‘ If you wish,’ he said, ‘ I will open your subscription at my offices.’

“ ‘ And what will you charge me for it ?’ I answered, enchanted.

“ ‘ Good heavens ! it is plain you are not a man of business. It is always five per cent.’

“ ‘Five per cent. on 8,000,000*l.* ; why, that makes 400,000*l.* ! I shall hire a place for twelve hundred francs and do my own business equally well.’

“ Well, the Grand Central had just left the Place Vendôme. There I established my offices, and thither capital flowed in abundance.

“ One who came to my office was a well-dressed man, I know not of what profession. ‘I wish,’ said he, ‘to subscribe for the Railway of the Isle of Sweden’ (*le chemin de fer de l’île de Suède*). ‘But,’ it was remarked to him, ‘it is not a railway, it is a canal ; it is not an island, it is an isthmus ; it is not in Sweden, it is at Suez.’

“ ‘It’s all the same to me,’ he replied ; ‘provided it be against the English, I subscribe.’ The same patriotic eagerness was found in many priests and military men. At Grenoble a whole regiment of engineers clubbed together to have its share in a work so eminently French. Even men of letters and retired public servants, who generally do not invest a sou in business, showed their desire to encourage our efforts. The Comte de Rambuteau, who was blind, said to me one day, ‘I have never placed a centime in any enterprise whatever ; nevertheless, I have taken two of your shares.’ ‘Those

two shares give me more pleasure,' I replied, 'than a hundred thousand others bought by a banker, for they are a fresh proof of the sympathy of France in my undertaking.'"

On October 15th he issued a circular to all the newspapers, explaining his project ; another to his agents, detailing the conditions of subscription. Finally, on December 26th, 1858, a notice was duly addressed to M. Rouher, the Minister of Public Works, announcing that the Company had been constituted ; and on the last day of the year 1858 he addressed another formal statement to the Pasha, summarizing from the beginning all that had been done. By this it appears that on November 30th, 1854, the original "mandat" had been issued, which was renewed on January 5th, 1856. The concession thus granted was in pursuance of the powers granted by the Hatti-Cherif of 1841, before alluded to, which settled the relations of the Sultan and Pasha. This view (which declared the concession to be an exercise of this power) had been endorsed by Prince Metternich in a note dated July 8th, 1856, and forwarded to the various Governments by the concessionary on October 28th, 1857, and duly remitted to the Grand Vizier on December

29th following. As the concession contained a licence to commence the works so soon as the Imperial authorization had been granted, De Lesseps was able to quote as his authority a Vizier's letter of March, 1855, in which the Pasha was congratulated on the enterprise as one most beneficial to the Empire, with other messages of the same kind ; also declarations made by the Ministers to foreign Ambassadors, one of whom wrote to De Lesseps that he had heard from Aali Pasha and Fuad Pasha that they were eager to prove that the Sultan would not "*de son chef*" offer any obstacle.

He informed the Pasha how the Company had been constituted, of the subscriptions that had been made, that they were ready to begin the work, surveys, &c., and invited his Highness to prove that as regards the Turkish authorization all was *en règle*.

Prince Jerome Napoleon was appointed "Protector," the President was the projector himself, and the style and title of the Association ran, "Universal Company of the Maritime Canal of Suez."

A curious and exceptional characteristic of the

subscription was the class of persons who acted as agents for the projector all over the world. They were some of the leading bankers and presidents of Chambers of Commerce in all the important towns. The subscription opened on November the 5th, and closed on the 30th of the same month. The conditions were thus set out. It was announced that the concession, being granted for ninety-nine years, began to run from the completion of the works. It will therefore expire in the year 1968. The lands are granted in fee. (This, it will be seen, was later revoked or modified.) It was to be a company of the French pattern, known as "Société Anonyme." The Statutes were confirmed by the Viceroy. Its social seat was fixed at Alexandria ; its legal domicile, as well as "attributif de jurisdiction" and "domicile administratif," were to be at Paris. The capital was 8,000,000*l.* sterling, in 400,000 shares of 20*l.* each ; 2*l.* to be paid on subscribing, 6*l.* on allotment, and no further payment was to be required for two years. During construction and from the date of allotment of the "provisional scrip" (*titres provisoires*) interest at five per cent. on the capital was to be paid to the investors. At Paris sub-

scriptions were to be paid at the offices of the Company, No. 16, Place Vendôme.

In a recent number of the *Edinburgh Review* (Jan. 1876) this engagement to pay interest on the subscriptions is treated as a device to attract the ignorant peasants. But it was forgotten that this was the system invariably pursued under the Empire. The small capitalist who lent his savings to the State had grown accustomed to the receipt of interest so soon as he had parted with his cash. To invite such a vast sum as eight millions sterling for a private Company from the pockets of rentiers and shopkeepers required something at least as tempting as the bait of the State securities. In Paris alone no less than 21,035 persons took shares.\* These subscribers took as much as 207,111 shares, more than half of the total amount.† On an analysis of the share list it was found that the chief proportion was taken by the class of "proprietors and rentiers;"

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\* "Journal l'Isthmus de Suez," Dec. 10, 1858. Another account makes it 21,229.

† In the "Journal l'Isthmus de Suez," this total is raised to 220,000 shares, on account of orders drawn abroad being included in the French subscription.

that "the army" and the lawyers had taken nearly the same number—viz., from 800 to 1000; that the clergy, professors, and physicians had taken, each class, from 450 to 500, and the "employés" 2195.\*

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\* Analysis of the subscriptions in "Le Canal de Suez," par Ernest Desplaces. Hachette. 1857. P. 261. See also official Papers.



## CHAPTER IX.

### THE CANAL BEGUN.

THE enemies of the project were not so dismayed by the launching of the Company as De Lesseps supposed, and in December it was known that there had been "a scene" at Cairo between Mr. Green, the English consul at Alexandria, and the Pasha. The consul had arrived specially for the purpose of representing that the Company had been formed, that De Lesseps was uncontrolled, in virtue of the concession, and that the Pasha would frequently find himself drawn into the most serious complications, and that he had better, while there was yet time, withdraw his authorization and disavow the whole transaction. The Pasha replied with some haughtiness that there was a misconception on the point. He himself was the promoter of the scheme, and from the beginning De Lesseps had done no more than carry out his orders. It was a scheme moreover favoured by the

whole of Europe—one that would bring honour on the country. The consul replied that it was, at least, objectionable to England. The Viceroy replied bluntly that he was determined to proceed, and would do his best to forward it in every way. On which the consul begged to be allowed to report the conversation to his Government.\*

Our projector had now made his way to Egypt, only to find new difficulties awaiting him. As we have seen, intrigues had been set on foot in Egypt, and it had been repeatedly suggested to the Viceroy that he was allowing a powerful Company to establish itself in his dominions, who would hold him responsible for any difficulties or delays, and perhaps claim enormous indemnities. It was suggested that the cautious reserve of the French Government, which seemed to wish to avoid being thought to be in any way patrons of the Canal, was in reality a sign of hostility. These considerations were likely enough to alarm him, and certainly the finesses of diplomacy had succeeded in involving the whole in such entangled meshes that it was impossible to discover in what position affairs really stood. For a

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\* Desplaces, "Canal de Suez," p. 307.

short time he seemed to hesitate, and our projector told him frankly that notwithstanding their friendship, and the serious obligations under which he was bound to him, their relations must of necessity be changed. He (De Lesseps) was now the representative of a great Company, who had intrusted their millions to his care, and could no longer be the obliged client of a kind patron. The Viceroy was not offended by this plain speaking,\* but his behaviour was certainly eccentric, and were it not the case of an Eastern might be set down to something more than singularity. De Lesseps himself shall relate how he was treated. "The Council sent a Commission to take possession of the land. We present ourselves with a statement addressed to the Viceroy, whom the difficulties continually raised since the formation of the Company had rendered so impatient that he would no longer listen to us, and would only grant us the shortest possible audiences. To let him know the contents of our letter, we were obliged to place it on an arm-chair, and take it back again, so that he should not appear to have received the notification of the Company

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\* "Entretiens," 1864, p. 52.

being in existence. As I knew that in reality we could count on him, we always maintained an extreme reserve. We left for Cairo, and he for Upper Egypt. One day he learns that I found it necessary to go to Cairo, where he was staying. He leaves by rail at once, taking his nephew, the present Viceroy, and his brother, and presses on the train at such a pace that his brother says to him, 'Monseigneur, we run more danger on the railway than with Monsieur de Lesseps.' How does it happen, I asked, that so great a sovereign did not turn such a man out of doors, or allowed him to come near him? This is the reason. In the East, when a Prince has in his youth known any one he cannot forbid him his threshold. So the Viceroy adopted the course of absenting himself. For a long time, when difficulties started up on every side, nothing worried him more than speaking of the Canal. He begged me to remain several weeks without seeing him. He told every one to grant me nothing, while secretly he allowed assistance to be given me. Thus, in an encampment where we were refused water, one of our engineers could only obtain some by threatening the captain of the boat pistol in hand.

“So the very next morning I had the audacity, at least in the eyes of the public, to inquire amongst Europeans for persons willing to enter our service. All natives had been driven from our yards. None but French remained. Our fellow-countrymen are always firm and steady at their post. Without them I should never have made the Canal, which is really the work of their mind and their energy. That day I hired, for 1200 francs a day, a steamer which belonged to the Government. I embarked on it persons of every kind to the number of two hundred. I placed myself at their head, and the police did not ask for papers.

“On leaving the port I did not venture to ask for a bill of health, preferring not to bring the despotic sanitary authorities on my shoulders. At Damietta I found a sanitary officer whom I took with me. ‘Suppose I lose my place?’ he asked. ‘I will give you another,’ I answered. He came with me to the governor, who, we are informed, was in bed. Well, as there is no governor, we are masters of the town. We take our provisions, and return on board in a boat. Some days later I inquire of the governor as to the serious illness which kept him in bed when I wanted to see him. ‘It was this,’

he answered : ' I had sent a telegraphic despatch to the Viceroy, informing him that you had collected men and provisions to be taken to Port Said ; and I asked for his instructions.' ' Imbecile,' replied the Viceroy, ' this is not the way to write " Said !" ' Finding the solution so little clear, to cut short every difficulty, I took to my bed.'

" Let us now accompany from Cairo the administrative commission charged with taking possession of the land of the Isthmus. Application was made to the chief camel-driver of Cairo for a hundred camels. He pretended not to have them. When this news was brought to me I was exhorting my companions to have patience with the Arabs. I interrupt my conversation, and going to my room find the chief camel-driver, and frighten him so terribly that he throws himself on his knees and promises all I want. I take him before the governor, and the order is given to form our caravan.

" We arrived at the last village in Lower Egypt. While my companions go shooting, I am told that an officer of the Cairo police, who had been following us for several days, has seized some of our camel-drivers, and imprisoned them, with ropes round their necks.

“ I immediately go to him, and after having asked for his instructions, which he could not show me, I treated him before the public in such a manner as to show the population that I was much his superior. In the East one must be either the hammer or the anvil.

“ Our last station, before plunging into the desert, was near to Korein. Some of our men ask for water and milk. They are answered that there is none. The truth was, as I knew, that the Cairo police-officer, who continued to follow us, had incited the inhabitants of the village to refuse us all provisions.”

The first contractor for the works was one M. Hardon, while Mougel-Bey was the general engineer, deviser, and inventor. At the early stages of the work the shareholders were encouraged by the description of a wonderful dredger, designed by these gentlemen, which was to perform prodigies in the way of saving human labour. The principle of this engine was an endless cloth band of great length moving on rollers, by which the mud was discharged, and which, by the action of the machine, carried it to shore. It was calculated that one thousand cubic yards would be thus removed in a single day

of ten hours.\* But this engine was to become antiquated within four or five years, when nearly four times that amount of work was performed by the great elevators and machines *à couloir* which were invented. Twenty-four of these dredgers were ordered in France and Belgium. Unfortunately a vessel laden with workmen and machinery, taken on board at Lyons, was lost off Bonifacio, and nineteen of the men were lost. This, it is believed, was the only serious disaster of the kind that befel the enterprise, and for this the Company was not responsible.

While the engineers and workmen were busily engaged at trenching their Canal, the old intrigues were being prosecuted at Constantinople and Cairo. The firman was withheld, and the Sultan still refused his assent. It was pressed on him, again and again, that the attitude of his vassal was scarcely respectful, and placed the suzerain in an undignified position. His approbation had been eagerly sought for many years, and now when it was withheld, a foreign Company was busily at work carrying out the scheme without that approbation, as though it were a matter of indifference whether it were obtained or not. Vast

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\* "First Report," 1860.



sums sunk in the sands of the Suez deserts by all classes of Frenchmen, had given that country pressing and substantial claims, which were now becoming embarrassing. In this situation the persecuted Sultan determined on the course of appealing to all the Powers to settle on some international arrangement which would relieve him of all responsibility. After the obsequious fashion of the time, which made every political arrangement originate with the French Emperor, this proposal took the shape of a request from the French Ambassador. It was so much homage to the power and sagacity of the late Ambassador, Lord Stratford de Redcliffe, who had suggested an arrangement of the same kind. It had been vehemently opposed by our projector, who now recommended it to his Company, it might be thought, with some inconsistency. But it should be recollected that he assured them it was then intended as a device to extinguish the whole scheme, whereas now the Canal was in progress, and to all intents *un fait accompli*. In all his declarations, too, he had protested that the material and political interests of the project should be kept distinct, and always had been eager that some such arrangement for the perfect neu-

trality of the Canal should be settled. The English envoy, however, was suspected of doing his best to render the concession futile. According to the gossip of the place, he was indefatigable in trying to have some covert insinuations of the unadvisability of the scheme introduced into the appeal, so as to influence the Powers. The French Minister worked in the opposite sense. M. de Lesseps is responsible for this picture of what was going on :—“M. de Thouvenel met this with his usual skill ; he exacted that the Sultan’s Council should discuss seriously all the advantages offered by the Canal in reference to the interests of the British Empire. And he required that the appeal to the Powers should follow the adoption of a resolution that the Canal *was* now advantageous—this gave rise, you may imagine”—he is writing to the Duke of Albufera, one of the Directors of the Company—“to a series of deliberations. The perplexity of the divan was extreme. The English envoy kept pressing the gentry of the sublime Porte with points like these : ‘If you agree that the scheme is advantageous, and then appeal to the Powers, you will offend England. For the case may justify her persistent opposition in the eyes of the world by

grounding it on the defence of Turkish interests. She is too haughty to avow at a conference that she is thinking of her own proper interests. As it seems only too probable that at a conference all will be in favour of the Canal, it will be you who shall have brought this mortification upon us, and we shall be obliged,' &c. All this was enforced by hints of war, in similar though friendly terms, and the exhibition of letters from Lord Cowley, his brother-in-law."\*

The Council held no less than sixteen meetings during this "agony," as De Lesseps calls it; and in December, 1859, the result arrived at was communicated by the Vizier, Mehemet Ruchdy Pasha, to M. de Lesseps himself. His words were to the effect that they were prepared to admit that the Canal was for the advantage of the Empire, as well as of the world; and that therefore he hoped that "no one would take it ill if they were now to call on the friendly Powers to come to an agreement on the political questions which would arise out of the Canal."†

Such being the situation at Constantinople, our projector had also to keep a vigilant watch in Cairo,

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\* "Entretiens," 1864, p. 69.      † Ibid. p. 71.

where the Viceroy was being worked upon. Indeed, on the eve of the first general meeting of the Company, held at Paris on May 1st, 1860, a rumour went abroad that he intended interrupting the operations and destroying what had been done. But there was no apparent foundation for this story. Nearly about the same time a member of the divan arrived from Constantinople with a peremptory order from the Sultan to suspend the works. The Pasha was then far more dependent on the whims of his suzerain than at present, and this command had to be obeyed.\* But this was going too far. The interference of the French Emperor was at once invoked, and the interdict removed. All this was distracting and harassing, and required incessant vigilance. It was, in fact, too late to interfere, had the Sultan desired it ; and so violent a proceeding would, in those days of French prestige, have been looked upon as an affront to France. That the enemies had inspired him with distrust is plain from the step the Pasha took—viz., to seek legal advice as to his rights from eminent French lawyers. But to the end he was loyal to the Company and to his old

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\* "First Report of the Company," 1860.

friend ; and when the legal opinions were laid before him, he adopted the view that seemed to favour the Company, and forthwith signed a new contract with them, binding himself to certain regular payments. He even, for a very moderate sum, sold them a vast tract known as El Ouady, and which the Society proposed to cultivate and colonize. In the centre of Egypt, on a straight line between Ismailia and Belbeis on the Nile, lay this territory—a sort of lancet-shaped tract, comprising 10,000 hectares, equivalent to about 28,000 English acres. This the friendly Viceroy conceded for the small sum of 86,000*l*. How valuable it became, and how much more valuable it is likely to become, will be apparent, as on its repurchase only five years later by the succeeding Viceroy the price was fixed at 400,000*l*. This increase was of course owing to the freshwater Canal, one of the indirect advantages brought by the Company to Egypt. Already the works were drawing numbers of settlers, who were establishing themselves at various points likely to be benefited by the Canal. Having thus shown himself a good ally and a sincere friend, and having by his last act given proof that he had not failed in his protection, this faithful patron died in

January, 1863, after returning from his tour through Europe. This was a serious blow for the undertaking, as the projector had not the same influence over his successor, who was, if anything, a little prejudiced against the Company.

Having thus anticipated events a little, for the purpose of a consecutive narrative, we shall turn to the Canal itself, and follow its construction from the day of its commencement to that of its opening.



**THE CONSTRUCTION OF THE  
CANAL.**





## CHAPTER X.

### THE CONSTRUCTION OF THE CANAL.

THE idea of a Canal across the Isthmus had nothing in it original, and, as M. de Lesseps owns, might have occurred to a child looking at the map of Africa. It seemed one of the most perverse arrangements of Nature, that a straight road should be thus blocked, as it were, by a wall, obliging the traveller to go round some thousand miles. It almost suggested the idea of the huge limb of Africa being attached to the trunk of the great continent by a slender ligament. Now that this has been severed, the geographical configuration of the world has been altered substantially, and Africa may be almost considered *an island*.

Geologists, however, are inclined to believe that over this sandy and marshy tract the water had actually passed, and that the Mediterranean and Red Seas had been joined at some remote era. Some of the fauna of both have been found inland, though

it has been objected that these have never been discovered together. But a third stream had also joined its waters to the others, and the Nile, always turbulent and irrepressible, had forced its way in a westerly direction to Lake Timsah, whence it had rushed north and south to join the two seas. This Napoleon's engineer, Lepère, thought sufficient to account for the separation of the fauna. He also argued, that as the camel is never found among the other animals depicted in the hieroglyphics of Egypt, it had not found its way into the country owing to this barrier; but that, after the land had been formed, there was nothing to prevent its introduction—an argument certainly ingenious, if not quite convincing.\*

The Egyptians were celebrated for their great works, to which they were drawn by their enormous supplies of forced labour; and their favourite form of operation seems to have been canals, the remains of which are found everywhere, some portions of which are actually in use. The obvious advantages of a communication between the seas would naturally have struck them, though they viewed the matter

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\* "Captain Clerk," *Fortnightly Review*, Jan. 1869.

more as helping internal communication, and without reference to the interest of other nations. The Nile already formed a kind of water-way from Alexandria to Cairo, and a communication established between Cairo and the Red Sea would have opened a complete water-way from sea to sea. This, according to Champollion, was done by Ramises II. or Sesostris, circa 1300 B.C. According to other accounts, it was Nechos, son of Psammetichus, who some 600 years later, undertook it. He was, however, warned by the Oracles that he was opening the country to invaders, and desisted after having wasted the lives of some 120,000 Egyptians. It was resumed some time later, and completed, it is said, by the Pharaohs. Its course ran from Suez to the Bitter Lakes ( $13\frac{1}{2}$  miles), then across these lakes (27 miles), thence to El Ouady (40 miles), which later was to belong to the Suez Canal Company, and from El Ouady to Bubastis, now called Zagazig (12 miles). The whole was thus  $92\frac{1}{2}$  miles long.\* A writer called El Kendi says that it was cleared in the year 645, within the space of six months.† The most interest-

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\* Captain Clerk, *supra*.

† "Lettres, Journal," &c., 1st series, p. 147.

ing fact, however, is that two shrewd observers have seen this canal at work. Herodotus describes it, as he saw it on his visit to Egypt, full of water ; it was wide enough, he wrote, to carry two vessels abreast. Strabo, who also travelled in Egypt not very long before the Christian era, saw the canal covered with vessels. It was from one hundred to one hundred and fifty feet wide, and very deep. Plutarch describes Cleopatra as attempting to escape after the Battle of Actium, but her vessels were stopped by the want of water in the Nile. It then fell into decay, but was re-opened by the Roman emperors. It was again abandoned, to be once more restored in the days of the Caliphs, A.D. 600 ; when, according to an Arabic writer, Schems-Eddin, it was Omar who undertook the work. It henceforth bore the name of "The Canal of the Commander of the Faithful." It remained thus open for 150 years, when a vassal, whose full style and titles ran to the unreasonable length of "Mohammed-Ben-Abdoullah Ben Hassan Ben el Horeïn-ben-Ali-ben-Abou-Thaleb," having revolted against the reigning Caliph of Irak, who was entitled Abou-dja-far Abdoullah-ben-Moham Med-el-Mausom, the latter sent instructions to his Lieutenant "to fill up the canal of

Quolzum, so that provisions should not be carried by it to Mecca."

The adventurer and traveller, Baron de Tott, mentions that the Sultan Mustafa was very anxious to restore the canal, and asked him to draw up a plan. The Sultan, however, did not live long enough to mature the project.

When Napoleon was sent to Egypt in 1798 the idea at once attracted him. To his logical mind it must have of necessity suggested itself, and like his great road over the Alps, his docks at Antwerp, and other enterprises, might have been carried out. He then advanced some distance from Suez, and on December 30, 1798, actually came on the remains of the old canal of the Pharaohs, whose embankment was still visible from twelve to twenty feet in height; and pursuing his journey discovered the other extremity near Balbeis. The scheme was part of a grand political project. He wished to have a straight road to India, and, seizing on Egypt, send assistance from thence to the Indian chiefs, and thus enable them to drive out the English. This programme of nearly a hundred years ago is significant of the political dangers which this geographical rearrangement may yet bring. Lepère and a commission of

savans were directed to examine the best means of carrying out the scheme, but before they could report, Napoleon was recalled by the Directory. It is well known that one result of their surveys was a delusion that the level of the Red Sea was some thirty feet higher than that of the Mediterranean, and that the formation of a canal would have the effect of flooding the whole country. "It is, therefore, certain," wrote Lepère, "after due study of the surveys we have made, that the Delta is liable to be inundated by the waters of the Red Sea, and that the fears entertained by the ancient Egyptians of submersion in case a canal were made, were well founded, in past times, when the Delta, and the bed of the Nile itself, were undoubtedly at a lower elevation." The mistake was pardonable considering the rude and even dangerous circumstances under which the surveys were made. This delusion, which was for a long time almost universally accepted, is akin to that imposed on the Royal Society by Charles II. "But," says M. Barthelemy St. Hilaire, "this very extraordinary result was not admitted by all the scientific men of the period. The illustrious Laplace, according to M. Paulin Talabot, uniformly protested against this opinion, which, militating with his theories of the system of the globe and the

equilibrium of its seas, he could not admit, however clearly it might appear to be demonstrated. Fourier, the great mathematician, and the profound author of the '*Théorie de la Chaleur*,' shared the opinion of Laplace, and repeatedly expressed it to many of his friends, from whom I have heard it."\*

The engineer himself had some misgivings:—  
"Pressés par le temps, inquiétés par les démonstrations hostiles des tribus arabes, obligés de suspendre à plusieurs reprises l'opération, forcés enfin d'exécuter au niveau d'eau une grande partie des nivellements, mis dans l'impossibilité de faire aucune vérification, il n'y a rien d'étonnant à ce que les ingénieurs habiles qui faisaient ces opérations dans des circonstances si exceptionnelles, soient arrivés à des résultats incertains." He leaned to a scheme for taking the Canal diagonally up the country to join the Nile, and thus connect Suez and Alexandria. But these plans never travelled beyond the covers of the magnificent volumes in which they were entombed, until the day when the modern projector read it at Alexandria. More curious was it that the next attempt made, should have been under the auspices of the prophets of the New Panti-

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\* "*Letters on Egypt*," p. 5.



socracy—the St. Simonians and Enfants, who were connected with a Society for “investigating the question of the Suez Canal.” Under their auspices the commission of engineers, Stephenson, Negrelli, and Talabot, made fresh surveys, which led to the wild scheme of “indirect” route, which was to cross the Nile on an aqueduct, and to be regulated by locks, and to be 300 miles long. Visionary as this project was, it was seriously discussed; but beside the simplicity of De Lesseps’ scheme it did not bear discussion.

The share of the English engineer in this survey was, later, as we have seen, to lead to some awkward results. His opinion against the Canal was so decided, that he put it aside as even unworthy of consideration, and almost at once threw himself with ardour into the English rival project of the railway. It is unfortunate for his reputation that he should have thus committed himself to so positive an opinion. He was replied to with vigour by his brother engineer, Negrelli, who more than insinuated that he had not been over the ground.\* The oft-quoted prophecy of the “dry ditch,” now seems

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\* See “Lettres, Journal,” &c., 2nd series, p. 273.

strange, coming from a professional man, as it was known that the Canal would be in sections, each bounded by vast reservoirs of water.

But the unreasoning and unreasonable character of the opposition becomes more conspicuous when we consider the deliberate and scientific character of the testimony which was brought to support the scheme. In 1857 the French Academy of Sciences deputed a commission, of which Elie de Beaumont and Charles Dupun were members, to examine the question, and they reported that the Canal and the method suggested for carrying it out were eminently practicable ; while another commission, appointed by the Dutch Government, after a thorough examination, came to the same conclusion. Indeed, to a nation that had performed such prodigies in dykes and waterworks, it must have seemed an ordinary undertaking of average difficulty. In fact, it may be said, that never was a scheme so repeatedly, so thoroughly and scientifically investigated as that of the Suez Canal ; while, on the other side, were put forward the careless declarations of a railway engineer, and the repeated assertion of politicians that the scheme was a "bubble" one, that "it would never be made, but that it would always remain a stagnant ditch."

§ 1. *The Work to be Done.*

The Suez Canal, as an engineering work, has often been spoken of lightly; indeed, its projector has himself described it as presenting less difficulty than a small French railway. Were such another cutting to be now attempted it would be accomplished with ease, as a piece of contractor's work. The truth is, when a work is the first of its kind, it is attacked doubtfully, because all kinds of difficulties are gratuitously assumed to exist which daunt the projectors and are encountered in hesitating fashion. The work itself discovers a solution—*solvitur ambulando*. But never was an undertaking so beset with these imaginary obstacles as the Suez Canal. An English engineer of eminence, Sir John Hawkshaw, has declared that it really offered no difficulties; or, at least, offered such as average professional skill could overcome.\* It is curious that this

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\* It will be interesting to compare the dimensions of two other great ship canals:—

	Length.		Breadth at bottom.		Depth.
North Holland Canal . .	51 miles	...	31 feet	...	20 feet
Caledonian Canal . . .	60 "	...	50 "	...	20 "
Suez Canal . . . .	100 "	...	246 "	...	25 "

most obvious line for a canal should have been favoured, and even indicated, by the peculiar formation of the ground. All along its course there is a natural depression or scoop, the lowest portion of which is the basin of the lakes which had long been dry. A sort of ridge starts from Cairo and makes its way across to the Bitter Lakes, where it is met almost at right angles by another ridge running south. At only two points does the ground rise much above the level of the sea—viz., at Serapeum and El Guisr, the latter being 59 feet, the former 36 feet, above the mean level. Unfortunately these prominences projected in some places across the line of the Canal and necessitated cuttings.

The Nile, as will be seen from a map, spreads out from Cairo upwards over the country exactly like the branches on the bough of a tree, and the fan-shaped space included between the three points of Cairo, Alexandria, and Damietta, roughly represent the cultivated or produce-bearing portions of Egypt. The rest is a desert, supplied with water by such costly shifts as the transport on the backs of camels. Travelling was painful, and even dangerous, and the land in default of irrigation worthless. The change wrought within fifteen years

by the two Canals, the Fresh-water and the Maritime, is incalculable ; where there was a desert there are 40,000 inhabitants. Three important towns and ports have been built, villas and gardens line the canals, and railways run along a portion of the banks ; and the desert portion being thus included between two belts of civilization, is gradually diminishing from the encroachings of improvement. So that, even taken as a work of irrigation, the Canal has been of incalculable benefit to the land. It will be now interesting to place ourselves in the position of the engineers, and take a survey of the whole line of the Canal from its starting-point in the Mediterranean.

Nothing less promising than the aspect of the coast could be conceived, and the forebodings of mariners who thought of the difficulties and dangers of "making" it in foul weather, might seem to be fully justified. Pelusium indeed offered the shelter of a bay, but there was no water, and the whole was a series of lagoons ; in parts large ships could not approach within four or five miles. And yet here it was proposed to make a great highway for the ships of the world ! A rather curious configuration of the outline of the coast here occurs. The sea is

separated from a huge lake, known as Lake Menzaleh, by a long strip of "slob" land that seems on the map like the rim of a tea-cup, a few hundred feet wide. This sort of sea-wall stretches across for about forty miles, and joins the two capes of the mainland together. Somewhere in this rim an opening was to be made for the Canal ; further on a port and town would have to be formed, with docks to shelter and repair vessels, warehouses to store goods, and all on a strip of slob land. A few fishermen gained a precarious livelihood here, there was no water, save only what could be transported on camels from Damietta. There was no stone. It seemed almost hopeless that anything could be done with such unpromising prospects. It seems almost incredible to read what has been done, and what seems the work of enchantment. Within ten years this strip of slob has been converted into a thriving town, laid out in regular streets and squares, having 10,000 inhabitants ; a fine port has been created, eight lines of steamers call there, and in ten months no less than 1000 vessels entered the port.\* The seaman has always spoken with dislike of flat coasts, where there

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\* Captain Clerk, in *Fortnightly Review*, 1869.

is no water for his vessel, and generally pronounces that it is impossible to cure such a defect. We have already seen with what diligence the enemies of the project urged this capital blot. We have already dwelt on the ridicule that was thrown on the idea of the channel to be formed between the enormous piers of stone projecting out to sea for five miles, and which were assumed to be indispensable. It was, however, admitted that the Canal would have to commence at some such distance, but the difficulty was not in the length, which the projectors were almost prepared to accept rather than sacrifice their Canal, but in the impossibility of finding firm ground to support such a work. The scientific prophecies of the *Edinburgh Review*, that as fast as the channel was dredged the sand would slip from beneath and the whole “tumble in,” the treacherous quicksands insatiately swallowing up every stone—these apprehensions, as we have seen, were all chimerical, and a point was discovered in the rim of sand where fully 30 feet of water could be found within little more than a mile from shore.

There was already existing an opening in this rim made by the Nile, and known as the Ghimelah Mouth ; but a point was selected more to the east,

about five miles lower down. Here the Canal proper was to begin, and from this point we shall hurriedly examine the ground it was to traverse. We at once find ourselves at the great Lake Menzaleh, a shallow lake, which would have from four to five feet of depth, and in which for twenty-nine miles the Canal would have to be excavated. The mainland is then reached at Kantara, where for about three miles it proceeds across a small tongue of land which separates the great lake from a smaller one, called Lake Ballah. It would then have to pass through Lake Ballah, a distance of about five miles, and there reach a hilly tract extending for nearly ten miles, and consisting of a gradually ascending series of hills culminating in El Guisr, thought to be one of the serious difficulties of the work. This plateau was about ten miles in length, and rose about fifty feet above the waterline. This surmounted, comes Lake Timsah, where was to be the halfway port. Across this hollow it was now to proceed for four miles. Though called a lake it had long been dried up. It is now a great sheet of water, four miles long by three broad. Next was encountered a second plateau, that of Serapeum, stretching for about seven miles, its highest point being about five-and-thirty



feet above the level. It is plain, indeed, that these two plateaus are virtually one, interrupted by the lake. Had the Canal been carried forward in a straight line another stiff plateau, that of Geneffè, would have here to be encountered ; but by following the course of the lake and striking off to the right it was avoided. The distance through the Bitter Lakes was about twenty miles. After this bend the straight course was resumed, down to Suez, where another plateau, that of Chalouf, interposed. Though all these lakes are met with in the course, they could give scarcely any assistance, save in one instance, by sparing the labour of excavation. This exception was in the case of the basin of the Bitter Lakes, where a depth of twenty feet of water could be obtained without cutting for a distance of about eight miles. As the Canal now stands completed, there are sixty miles of passage through lakes, and forty miles cut in the land.

As regards the character of the soil, it may be generally stated that the higher portion, from Lake Menzaleh to about the middle, was formed of a sea-sand easy to work. The lower half was gravelly, with clay and sand ; while in the bottom of the Bitter Lakes was found a large deposit, six feet deep, of

crystallized salts.\* This was proof that the Red Sea had formerly flowed over this basin. Near Serapeum a layer of gypsum was found, which in one place for a length of eighty yards increased suddenly to the extraordinary thickness of seven feet.† Such is a hasty sketch of the difficulties offered by the ground.

It may be mentioned here that though, by the concession, the Canal was required to run in an almost straight line from sea to sea, the question of arranging the channel was left an open one, and Mr. Maclean, the well-known English engineer on the Commission, submitted a proposal which was seriously considered, debated, and finally rejected. This was to construct high banks all along the course of the Canal, and raise the waterline almost to the level of these banks, confining the water between locks at both ends. The Canal being thus raised many feet above the level of the sea, no dredging would be required, while its bed would be sheltered from the sands by the high banks. But there

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\* "Conference," 1865, p. 84.

† Report of Captain Richards and Lieutenant Clarke, 1870. ("Blue Book.")

were obvious objections to this scheme; danger of the banks bursting, or of the water infiltrating through the sand, to say nothing of the check on traffic owing to the locks at each end.

It will now be interesting to follow, in detail, the work of the engineers. They had wisely determined to commence with the entrance to the Canal from the sea, thus securing a base for their operations and a landing-place for supplies. The first point therefore to be considered is one on which much contempt had been lavished.

### § 2. *Port Said and its Channel.*

On the 9th of March, 1859, when this great work was begun, our projector could scarcely have trusted himself to look forward to the inauguration, almost exactly ten years later, when ships were steaming in splendid procession between the two long piers, and the whole channel was clear from end to end. The strip of sand on which the engineers stood was little more than five hundred feet wide; over which, in stormy weather, the sea washed. Their plan was of the simplest. At first a light framing of piles

was run out, on which a crane and trucks laden with loose stones travelled; and in a short time a fairly substantial pier, that served as a landing stage for the various supplies of materials, machinery, &c., was constructed.

Encouraged by this success, a bolder work was ventured on, and with the same happy result. Far out in the bay at about a kilometre and a half distant from shore, huge piles were *screwed* into the sands, and an oblong island was there formed with stones, the space between the island and the wooden shore pier being gradually filled in. Every day the piles settled firmly in their places, in spite of the storms of the bay. This temporary structure was carried out to a distance of about 300 feet, and it was not until 1866 that the work was seriously resumed, and the breakwater joined to the pier. The appearance it now presents is thus described by two officers, appointed in 1870 to report on the whole, by the English Government :—

“ Port Said, though affording sufficiently good anchorage for small vessels, cannot be considered a harbour, either in respect of extent or depth, for vessels of large tonnage and great draught of water. It is formed by two rough, narrow, and low break-

waters, of unfinished appearance, enclosing an area of some 450 acres, with an average depth of only 13 or 14 feet of water, except in the ship channel leading to the inner basins, where the depth is from 25 to 28 feet. The western breakwater, which extends for 6940 feet at right angles to the shore, and is slightly curved to the eastward towards its extremity, was commenced in 1860, and carried out about 1300 feet; beyond which point, and at a short distance from it, was deposited a heap of stones that was surrounded by iron piles, and from its detached position was called 'The Island.' The work was then left untouched till 1866, when the breakwater was joined to the Island, and it was continued to its present length, and finished in 1868. From the mainland to the Island the breakwater is formed, on its inner side, of a bank of rubble stones, surmounted by a promenade, over which the spray breaks with a very moderate N.W. wind, and on the outer or sea front of concrete blocks; but beyond the Island to its termination it is entirely constructed of large blocks of artificial stone, composed of one part of French hydraulic lime with two parts of sand, and some of which were transferred to it from the eastern breakwater. This latter, which is also con-

structed of large masses of concrete, is of more recent construction ; it extends about 6020 feet, and converges towards the western breakwater."

In presence of this fine work, thus easily completed, it is amusing to turn to the prophecy of the *Edinburgh Review*. "*Any constructions,*" it said, "*attempted so as to form an entrance for the Canal, will be swallowed up. Every block, every stone will be swallowed up, and we shall not see a single one above the water.*"

It was fortunate that this long artificial channel, made at such trouble and cost, happily served to obviate another threatened danger. It was apprehended, and not unreasonably, that the silting sands, and above all the amount of deposit brought down by the Nile, which was calculated at an enormous amount, would rapidly accumulate at the mouth of any port that might be formed. These long piers, therefore, stretching out at right angles to the shore, would act as a wall or barrier. Further, on making soundings it was ascertained that the sands extended out from the shore to a distance of 750 yards, beyond which was found a fixed muddy formation. As the sands were noticed to be gaining on the sea at the rate of about sixty feet a year, it

was reasonably urged that the silting was confined to the space, sheltered by the piers, and did not extend as far as the mouth. Captain Richards and his companions estimate this encroachment in ten years at 1220 feet, making an area of forty-five acres. During some periods, however, the silting has altogether ceased. How slight and remote any trouble to be apprehended from this source is, may be gathered from the fact that the "area included within a line drawn from the eastern end of the breakwater to the tangent of the beach line, about three miles to the westward, is 1400 acres."\*

The piers, it is admitted, were constructed in rather a rough-and-ready fashion, and not with the neat and accurate finish which attends

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\* "As to any difficulty, say these officers, of approaching Port Said by steamships, under ordinary circumstances there is none ; the coast is very low, but the masts of the shipping and the high lighthouse are conspicuous marks at a good offing, and it is only necessary to bring the latter on the bearing pointed out and steer for it. It is certainly not recommended to enter at night, unless with the aid of a pilot and under exceptionally favourable circumstances, or with a small vessel whose draught would permit her to anchor between the breakwaters, nor would it be prudent to run for the port in a gale blowing on shore. In this respect, indeed, Port Said may be considered under the same conditions as Alexandria ; there is neither more nor less danger in the one case than the other, and in either there is sufficient sea room."

English submarine workmanship. The blocks were tilted into the water down an inclined plane, and not adjusted in their places by divers. Neither have the piers been made sufficiently high and broad. The result is, that with high winds and waves the sands are drifted through the interstices, or the sea washes over, bringing with it more sand. All this, however, is merely inconvenience, and a dredger working a single month in the year, can remove it. Connected with this question an interesting discussion arose, which illustrates how scientific reasonings can be made to throw light on practical points. Sir John Hawkshaw investigated this point—whether the accumulation was brought down by the Nile, or was the shifting sea sand—with great care. The question, it will be seen, was vital, as the Nile detritus descending in enormous quantities every year would be almost impossible to cope with.\*

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\* “Captain Spratt is of opinion that a large amount of sand comes down the Nile and travels from west to east, past the entrance of the proposed Canal—that this sand would tend to choke up the entrance to the Canal, and that it would be very difficult to prevent this result by dredging. Captain Spratt is also of opinion that not only the sand on the shore at Port Said and in the Bay of Pelusium, but also that the pieces of broken pottery, which are



It had been said again and again that it would be impossible to form this pier from want of stone. It was declared triumphantly that there were no quarries

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occasionally met with in those localities, are all from the Nile ; and he is further of opinion that this sand cannot have come from the sea coast, because the rocks lying to the westward on that coast are calcareous, while the sands at Port Said and the Bay of Pelusium are silicious.

“ On the other hand, M. Mougel Bey, a French engineer for many years engaged upon important engineering works in Egypt, among others, upon the great work of the Barrage, in his published reply to Captain Spratt's Report, asserts that the sand at Port Said comes from the sea, and that Captain Spratt is wrong in most of his conclusions.

“ And M. Larousse, who was charged in 1860 by his Highness the late Viceroy to survey the mouths of the Nile, informed me that during the time he was so employed he made constant and regular observations of the matter deposited by the river, both in the interior and exterior of the Bars, and that he found it invariably composed of argillaceous particles, mixed with exceedingly fine silicious particles, which were totally different from the sands of the sea shore. From his observations M. Larousse draws the conclusion that the amount of sand brought to the sea shore by the Nile can only be very small, and that, consequently, the deposits of the Nile will not add much to the difficulty of the maintenance of Port Said.

“ In order to determine the true state of the case, I collected sands from different localities, and had them submitted to analysis by an experienced chemist.

“ The analysis shows that the sand near Alexandria is more calcareous than that in the Bay of Pelusium.

“ But the mere establishment of this fact does not justify the con-

nearer than Lake Timsah or Suez, and it would be impossible to drag huge stones across the desert one hundred or even fifty miles. That even a journal of

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clusion that the silicious sand comes, either wholly or principally, from the Nile, for though the rocks, which form the coast line near Alexandria, and are visible on the sea shore westward of that Port, and eastward as far as Rameleh, are calcareous, yet so also all the rocks, in the region of the Nile lying northward of a line drawn from Gebel Attaka to the Pyramids, are, with very small exceptions, calcareous. How much higher the same description of rock extends I cannot from my own observation say; but I have no doubt, for a considerable distance. If, however, they reach no further, it is evident that analysis affords no greater authority for saying that the silicious sands of the Bay of Pelusium come from the Nile than from the sea shore.

“ In addition to the sand on the coast, I also had specimens of the calcareous rocks analysed, and the result proved that they contained silex.

“ When first the abrasion of the rocks took place, the material would be chiefly calcareous; but as it travelled further from its parent rock, the calcareous matter would gradually disappear, whilst the silicious particles would remain. The fact therefore of the sand losing its calcareous character, is only an indication of age, and does not disprove its origin from calcareous rocks, any more than the circumstance of the flint shingle on the south coast of England, being found unmixed with chalk, disproves its relationship to the chalk cliffs of Dover or other localities, which contain the flint from which the shingle derives its origin.

“ The river Nile, however, within the limits I have indicated, nowhere at the present day shows rocks upon its margin, nor is there any place within the same limits, except for a short distance, say 3 kilometres (about 2 miles) on the left bank near Rosetta,

reputation like the *Edinburgh Review* should be in ignorance as to the natural resources of a dreary and unexplored waste would be excusable ; but there

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and for the same length below Damietta, where sand hills touch the river. The banks of the Nile are of the same description of silt as that which covers the cultivated portion of Lower Egypt. This bed of silt, however, overlies a deposit of sea sand.

“Now the Nile, which rises in highest floods at Cairo 8 metres (26½ feet), rises only 1 metre (3¼ feet) at its mouths near Damietta and Rosetta, and a very considerable proportion of its waters are, below Cairo, led away by canals into the region of cultivation, and pass thence, through the shallow lakes that border the Mediterranean, into that sea. The consequence is that the surface of the Nile loses its declivity as it approaches the sea, its velocity therefore diminishes, and it is only the finer particles that are carried forward, with which it is, as it has been for years, extending its delta ; these fine particles are mainly of the same material as that which forms the surface now under cultivation.

“In my examination of the sea coast, I found that the soft calcareous rocks from near Rameleh, as far westward as I travelled, are being worn away by the action of the sea. Ancient tombs near Alexandria, cut out of the solid rock, have in consequence now nearly disappeared ; and east and west of Alexandria there are other indications of a similar kind.

“I also noticed, when following the coast, larger accumulations of sand and a greater quantity of broken pottery between Alexandria and the Bay of Aboukir, than exist anywhere between the eastern or Damietta mouth of the Nile and Port Said.

“It is just as probable, therefore, that the sand at Port Said comes from the sea shore, where there is an obvious source of supply, as from the Nile, where within an equal or greater dis-

is a recklessness in such positive declarations when accompanied by such absolute ignorance. It turns out that there were large quarries so near as Mex, close to Alexandria, whence the stone could be

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tance there is none so visible. Some sand, however, may come down the Nile. The cultivated Delta below Cairo rests, as before mentioned, on a bed of sea sand, and a portion of it may occasionally find its way again to sea. But the process now going on seaward is probably more in accordance with that which formed the fertile land—viz., the covering of sea sand and other marine deposits by the fluvial and lighter matter brought down by the river.

“The presence of pottery in the Bay of Pelusium may be accounted for in various ways. Lake Menzaleh abounds with the ruins of towns from which pottery may have found its way to the sea coast through the several mouths (Boghazes); or, what is just as likely, from the circumstance of the sea coast having probably for thousands of years been used as a highway, along which Egyptians, ancient and modern, have travelled, who occasionally, as is the custom at the present day, carried pottery with them. It is not surprising, therefore, that broken pottery should be met with on so ancient a route.

“The question, however, as to whether the sand found in the Bay of Pelusium comes down the Nile or from another source is a subject interesting more as a scientific inquiry than as a point influencing the decision of the question affecting the Canal. It is not very material to the discussion to determine whether all the sand comes down the Nile, as Captain Spratt supposes, or from the sea, as is the opinion of his opponents; but as the question has been made a prominent feature, and has been much discussed in connexion with the Canal, it was necessary to make a few

conveyed by water.\* The contractors, however, fell back on their own resources, and found it more convenient to manufacture the stone on the spot, so that, granting the existence of the difficulty, the possibility of such a device never occurred to the objectors. These blocks were about twelve cubic yards in size, and weighed some twenty-two tons each. They are formed of a mixture composed of two-thirds sand and one-third "hydraulic lime," imported from Theil, in France. These elements being worked together by machinery, with salt water,

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remarks thereon. Evidently the important question to the Canal is to ascertain—

- a. Whether the sand travels from east to west, or in the contrary direction.
- b. Whether or not it travels in large quantities.

"My investigations have led me to the conclusion that whilst some small quantity of sand—by which I mean silicious particles large enough to constitute such sand as is met with at Port Said—may find its way into the sea from the Nile, a larger quantity has been and is still being brought by the sea itself from the abrasion of silicio-calcareous rocks which form part of the coast, and that probably the greater portion of this sand is merely the continuation or visible margin of that which, as before mentioned, lies under the muddy deposit of the Nile. And that whether the sand come from one or both sources, there is no doubt that it travels from west to east, and the quantity that finds its way past Port Said is not large."—*Report of Sir J. Hawkshaw*, p. 22.

\* "Conference," 1865, p. 10.

are run into great moulds, allowed to harden, and were then allowed to slide down below water. Nearly 30,000 of these blocks were used, each costing about 16/. The whole has continued as firm as any structure of the kind in Europe, and is consolidating with every year.

The passive hostility of the smaller officials threw many obstacles in the way. The drinking water for the workmen had to be carried in barges all across Lake Menzaleh from the mainland after being transported from the Nile on camels and donkeys, of which some three thousand were employed. These the officials as well as the natives often stopped on their way. On some occasions the supply failed. When the news reached our projector, who was at Alexandria, he at once freighted a steamer with sets of distilling apparatus and a staff of workmen, and for the future made his parties independent of native supplies. This opposition went even further, and it was found that the inhabitants who assisted the agents of the Company were frightened with threats, and sometimes beaten.

§ 3. *Lake Menzaleh.*

The next stage in the work was the carrying the Canal across to Lake Menzaleh, a distance of about twenty miles, from Port Said to Kantara, the first point on the mainland. This large tract was little more than five feet deep, while below the water was slob, formed by the rich Nile deposit. Here the opponents of the scheme had decided that the scheme must break down, for the reason that when the Canal was scooped out the bottom would not hold water, the shifting mud or sand sucking it all up like sponges, and the cutting would be as porous as the pitchers of the Danaïdes. There was a speciousness in this declaration that invited acceptance. Further, the Canal banks resting on such a treacherous foundation, would melt away through their very weight. An admitted difficulty, too, was the removal of the stuff, which was liquid mud, and when applied as material for banks would dissolve away as fast as laid down. But for this a special kind of labourer was found in the natives dwelling on the banks of the lake, a patient, strong, and laborious race,

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who were accustomed to "treat" this mud. The mode they adopted was simply to scoop up large masses, out of which they squeezed the water by pressing it against their chests; then they laid it in lumps one on the other. By this laborious process a small channel not more than twelve feet wide was formed, which was quite sufficient as a beginning, or engineering "sketch," as it were; for one of the ingenious parts of the well-considered system was to begin by making a sort of toy-channel from end to end only a few feet deep, which was to serve as a water-road for the purposes of transport for carrying on the works, and this was to be gradually deepened and enlarged. Thus, in the Lake Menzaleh section, as soon as the small cutting was ready, dredgers were set to work, whose operations soon reached below the mud to a stiff clay. This it discharged upon the banks at each side, raised and widened them, and allowed the Canal also to be widened to its proper extent. The simple precaution of allowing the discharge of slob and clay to dry in the sun before another layer was added gave cohesion and solidity. There were many disheartening incidents owing to the gales and storms that rose at times, and swept away portions of the banks; but



these casualties were promptly repaired, and only caused delay. When finished, these banks stood about six feet high above the water. Thus the sun co-operated, and baked the whole into a firm, solid mass, so firm that the banks were used as roads, on which heavy loads were transported. So much for the anticipated Danaides pitchers, and "the treacherous slob" which was to suck up everything laid upon it.

#### § 4. *The Plateau of El Guisr.*

Having now reached the mainland, there were about two miles of channel to be made, when they found themselves at Lake Ballah, an irregular swamp, almost dry, and through which the cutting had to be carried for about eight miles. Here the soil excavated was found to be gypsum, which when used for the banks cracked and decomposed, so other materials had to be carried from some distance. But when they had done with the slob and plaster, they had to encounter difficulties of a more serious kind. A huge plateau, known as El Guisr, stopped the way, and here, said the opponents, "one of the most disastrous surprises" awaited them. English

navvies would soon make a cutting through such an obstruction ; but this series of hills was all sand. No art can maintain a cutting through sand, as any one can satisfy himself by simple experiment on a table, for as soon as any portion is taken out, the rest falls in by its own weight, and fills up the space. The workmen, it was urged, would infallibly be buried alive. All this again was proved to be a delusion, and by the time the Canal was completed, fifty millions of cubic yards were excavated. "El Guisr lies four miles south of El Ferdane, and the cutting had to be made to a depth of nearly seventy feet. Three lines of tramway were laid down, and six large engines and 250 waggons accomplished the work, which was completed by the contractor, M. Couvreux, by January, 1868, six months under the contract time."\* None of the anticipated evils occurred ; the banks gradually consolidated, as, indeed, one might have anticipated, as the great works in sand made along the Belgian and Dutch coasts.

Though it was not until 1868 that the excavation

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\* Captain Clerk, *Fortnightly Review*, *supra*. Very attractive advantages were, however, held out to the contractors who thus anticipated the term of the contract.

of this plateau was completed, it was made passable so early as 1862. For the wise system, as already stated, upon which the progress of the work was arranged, was to have it open in some shape so as to hold water—were it only enough to float a skiff. But water once present, a most powerful mode of excavation could be employed—viz., that of steam dredging, which would enlarge the Canal to any extent desired.

But again it was urged: granted that something like a trench across the Isthmus can be made, how are the terrible tornadoes that sweep across the land, the whirlwinds that bury an object in an incredibly short space of time, choking up the cuttings, to be encountered? It was admitted that such visitations did prevail, but it was significant that such natural depressions as the Ballah Lakes and Lake Timsah had not hitherto been filled up. The sagacious Frenchman noticed that this was owing to certain protective banks, formed by these very whirlwinds, and which grew with the violence of the attack; and it might fairly be assumed that the artificial banks all along the Canal might operate in the same way. But, in truth, the whole was merely a visionary danger, and the two English officers who made the report of

1870 acutely concluded that the condition of the small Sweet-water Canal would be a fair test of what the larger Canal would be exposed to, and they found that the decrease in its depth during a period of seven or eight years was "insignificant."

"From Suez," says Sir J. Hawkshaw, "to the northern end of the Bitter Lakes, those sands lying adjacent to the Canal are generally so compact, being often covered with small gravel, as to prevent their shifting in any important degree, and there will be no moving sands to affect the Canal where it passes through Lake Timsah, Lake Ballah, and Lake Menzaleh.

"The only portions of the Canal, therefore, likely to be affected by drifting sand, are those which will extend from Lake Timsah to Lake Ballah, about  $22\frac{1}{2}$  kilometres (14 miles) in length, and a portion near Serapeum, say for about 14 kilometres ( $8\frac{1}{2}$  miles) in length. Altogether, the portion of the Canal liable to be so affected will not exceed  $36\frac{1}{2}$  kilometres ( $22\frac{1}{2}$  miles).

"M. Villers, who is the engineer of the works of the Canal from Lake Timsah to Lake Ballah, and where the excavation of the Canal has already been formed of sufficient depth to arrest moving sand, informed

me that from the 1st January to the 23rd November, 1862, 30,000 cube metres (39,000 cube yards) only of blown sand found their way into the Canal, and he was of opinion that when the works were completed this quantity would be greatly diminished, and I certainly see no reason why it should be increased.

“Assuming a proportionate quantity to that measured by M. Villers to find its way into the Canal in the other 14 kilometres ( $8\frac{1}{2}$  miles) near Serapeum, the total amount of deposit from this source would be about 47,500 cube metres (62,000 cube yards) in a year.

“But in addition to this, some sand will find its way into the Canal from the slopes. Assuming the quantity of deposit from this source to be equal to that from blown sand, then the total quantity arising from drifting sand, and from the slopes, and from the sea water that enters the Canal, to make up the loss from evaporation and infiltration, will amount to 153,500 cube yards annually.”\*

Another objection that was insisted on was that the banks would be all eroded by the action of the steamers. “A careful examination,” say the English

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\* “Report,” p. 20.

officers,\* "of the Sweet-water Canal, which runs for many miles parallel to and through the same soil as the Maritime Canal, showed that during the seven or eight years since its formation, though it has been once cleaned out, its section has been but little affected by the erosion of its banks from passing vessels (and the traffic on it is very considerable). With reference to the former, we found that from the nature of the soil, and this of course applies to that of the Maritime Canal, which contains lime in large quantities, the banks below and a little above the water become hard and encrusted, and the ordinary wave or wash from a passing vessel, going at moderate speed, disturbs the surface but little, if at all. Observations in the Maritime Canal showed the same results, more especially where the banks were steep and on a good incline, for there it was noticed that as the wave rose and fell, the water coming off them was not discoloured, nor did it bring back with it any sand or mud ; but along those portions of the Canal where on either side wide berms or horizontal benching have been left a little above or below the surface level of the water, considerable

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\* "Report," p. 9.

agitation of the soil took place, particularly when the vessel proceeded at a speed exceeding four knots, and the wave rolled off the banks heavily charged with the detritus of these berms, and much discoloured. We regard this, in point of construction, as the least favourable feature of the entire work; and though in time, when the banks shall have assumed their natural sections, this disturbance may cease, yet till then, some little silting, necessitating continuous dredging operations to keep the centre of the Canal to its normal width and depth, will be the result. Through these parts of the Canal, as indeed throughout its entire course, except in the larger Bitter Lake, the speed should never be permitted to exceed four or five knots per hour, a rate which, under all ordinary circumstances ruling the transit of a ship from sea to sea, is sufficient to insure correct steerage." It should not be forgotten that the works had been directed by M. Conrad, a Dutch engineer of waterworks, to whom all such objects were perfectly familiar.

#### § 5. *The Fresh-water Canal.*

One of the most interesting features of this great scheme, was the "Fresh-water Canal." Indeed, no-

thing is more admirable than the thorough and symmetrical fashion in which the whole was worked out by the skilful projector. This conduit entered into the secondary or less direct purpose of the plan, and its importance has long been overlooked. Besides furnishing a grand cosmopolitan waterway across the Isthmus, the Company proposed acting as improvers and irrigators of the land, as they were themselves holders of vast tracts of territory; their Fresh-water Canal also served to supply the workmen. Thus the old idea of the Egyptian canals, which served for the communications of the country, as well as for supplying it with water, was carried out as an essential element of the scheme.

There was great skill and ingenuity shown in the manner in which this conception was worked out. Many naturally fancied that there was a sad waste of labour and expense in this double system of canals; and it seemed hard that the enterprise should be weighted with an extra cutting. It was contrived, however, in the following way.

The first idea had been the rude one of a stream of fresh water from end to end, carrying the Mediterranean water along the track of the Maritime Canal. But a more advantageous project was soon



conceived. It was found that only half of this conduit need be made, for while the northern portion of the larger Canal was in progress the workmen were supplied from the native sources, and by distillation. The embarrassments of carrying on a vast undertaking, where from 15,000 to 20,000 labourers were employed, without a supply of water, seemed unconquerable. Even Suez was without a supply of its own ; and so late as 1862, Sir John Hawkshaw witnessed trains conveying great iron tanks passing all day long between Cairo and that town.

If then, while this northern half of the Canal proper was being made, the portion of the Fresh-water Canal from lake Timsah down to Suez was also being constructed, the result would be that there would be "through water" communication of some description along the whole route from end to end.

On the principle that the same length of fresh-water, or perhaps a little more, could be made infinitely more profitable as a permanent benefit to the country, instead of being a mere convenience to the workmen, it was determined to bring the water from the centre of the country across to the east, where it would meet the Canal, or the portion of it that was finished, at right angles, and thence make a con-

tinuation of it southward. It started from Zagazig, which was close to Buseis or Bubastis, and took its course across the country for fifty miles. Reaching Lake Timsah it joined the northern portion of the sea Canal, from which it was separated by a double lock. This was necessary, as the level of the Nile is some seventeen feet above that of the sea. This portion of the Fresh-water Canal was an important work in itself, being sixty feet in width by eighty in depth. Above the locks an arm branched out southwards, which maintained the same level. The northern portion, therefore, was on a different level from the southern.

It had been agreed that this Fresh-water Canal should be undertaken by the Egyptian Government—one of those favourable arrangements for the Company which the good nature of the Pasha had conceded. Though it was for the advantage of the country, it was really a part of the construction. However, after long delays, M. de Lesseps saw that the Company itself must take it in hand, and a new and more favourable agreement was entered into, by which the Company undertook to construct it at the cost of the Government. Its easterly course served their interests, as they had purchased

the domain of El Ouady for 80,000*l.*, and the Canal was to water this property ; and when the Pasha, Mohammed Said, came to inspect the works at the close of the year 1860, the fresh water had been brought across the country as far as Lake Timsah, while the works of the main Canal had reached the foot of the plateau El Guisr. Good progress, certainly, for the time employed. But the Nile and Mediterranean were not destined to mingle their waters here, though the river was to make its way to the Red Sea.

The course of this conduit, as it runs at present, takes the shape of an arc. It starts from Cairo, ascends to Ras el Wadè, and descends again to Suez, after shooting out a little branch to Lake Timsah. Originally, however, advantage was taken of a branch of the Nile, which, as we have seen, came from near Zagazig ; but as this source was attenuated and liable to run dry, from having to pass through many channels, it was later determined to draw the water from the main stream itself at Cairo.

The short length of canal joining Lake Timsah and Ras el Wadè was likewise twenty miles ; it was eight feet deep and about sixty wide. Its cost was

28,000*l.* The portion from Timsah to Suez was about fifty miles in length, and that from Cairo to Ras el Wadè fifty-six, the cost of both being estimated (in 1862) at 280,000*l.* The total outlay for this useful work was to have been 310,000*l.*,\* but its benefits have been incalculable. It is now used as a waterway as well as a conduit, bringing life and animation, health and business, and we shall see later on how it has transformed the face of the country.

So soon as the upper portion had been completed, the arrival of the Nile water at Lake Timsah was turned to profit.† A water tower was erected, and a steam engine set up at the great plateau of El Guisr, capable of pumping up 1500 cubic metres a day. Pipes were then laid down along the banks, with hydrants at every kilometre, and thus the water was conveyed to Port Said, where the wants of 20,000 inhabitants are now supplied. Thus in every direction we shall find this readiness of resource, which, as has been said, distinguishes French engineering.

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\* Sir J. Hawkshaw's "Report," pp. 7-9.

† Lake Timsah was not filled until 1867.

§ 6. *Ismailia.*

A few miles bring us to what we have called the halfway port of Ismailia, having thus traversed the upper and perhaps least important section of the works. The lower section was for a long time unattempted, and the obstacles encountered at the Cairo Court after the year 1862 seem to have damped the energies of those engaged. Nothing is more wonderful than the change produced in this desolate spot since that year. Seven years later it had burst into a brilliant French town, a quay running along the edge of the lake. "The new town of Ismailia," says a visitor in 1869, "has now more than 6000 inhabitants, of whom more than a third are Europeans. Two hotels, four or five cafés, a theatre where vaudevilles are performed with spirit, a pretty Catholic chapel, a mosque for Arab workmen, a hospital and a telegraph-office, a long and well-built street with numerous well-stocked shops, a large square, and a public garden planned by French taste and cultivated with French assiduity, a fountain supplied with Nile water—these are the features which attract the attention of the stranger as he wanders through the town. The

rapid increase of vegetation since the fresh water was brought to Ismailia has been attended with a great improvement in the climate. At the present time Ismailia, during eight months of the year, is probably the healthiest spot in Northern Egypt.

“The heat of its summer is intense and almost intolerable; thermometrical observations taken during 1867 and 1868 show that the mean temperature of the four months, beginning with June and ending with September, was 94 deg. Fahrenheit, and that 120 deg. in the shade was not an uncommon record, while the minimum of night was 75 deg. The mean temperature of the succeeding four months was 74 deg.; and the winter, if so it can be called, proved that the lowest range of the thermometer was 45 deg. Until two years ago rain was unknown, but in the twelvemonth ending April, 1868, there were actually fourteen days on which rain fell, and no later than three weeks ago fell a tremendous shower of rain, a phenomenon which the oldest Arab had never previously witnessed. The scenery about Ismailia is monotonous, but it can scarcely be regarded as uninteresting. Cloudless skies of the richest blue are contrasted with the vast expanse of

yellow sand which stretches away into a hazy distance. The dark waters of the lake sparkle and flash unceasingly, for there is always a fresh breeze to temper the extreme sultriness. The desert is susceptible of many shades and transitions of colour, sometimes so gradual as to be scarcely perceptible, often so sudden and mysterious that it is hard to understand by what subtle atmospheric changes such strange effects have been produced. At Ismailia the stranger can fully realize the balm and beauty of the Egyptian night; and, sitting on the balcony of the Hôtel des Voyageurs, which commands the view of Lake Timsah, he may watch the moon rising slowly in a silver dawn, while the rosy tints of the sunset are still lingering in the west. About three miles to the south, on the line taken by the Canal, twinkling lights mark the positions of the dredges, and in less than a year to come, if the hopes of the President of the Company be fulfilled, the graceful outlines of the largest and swiftest steamers will give additional animation to a picture which even now possesses a peculiar charm."

It seems extraordinary how this wonderful man could have been able to organize and develop so many departments of his scheme. It can be seen

now how fruitful it was in many ways, and that the Maritime Canal was but a portion of it.

By the end then of the year 1862 it was not difficult to take stock of such work as had been accomplished. A communication between the Mediterranean and the Lake Timsah had been opened, and partly by dredging in Lake Menzaleh, and partly by excavating between that lake and Lake Timsah, a water-way sufficient for flat-bottomed boats of small draught had been contrived. A small portion of the western jetty at Port Said had been constructed, and houses and workshops had been built at Port Said, Timsah, and El Guisr. The sums expended amounted to 1,984,000*l.*, to be reduced by the value of plant, lands, &c., to 1,220,000*l.* Captain Clerk states that the drift was principally found to occur in the cuttings, like those of El Guisr and Serapeum; reaching in the former to the amount of 52,000 cubic yards annually, that in the latter to as much as 392,400 cubic yards may be expected.\* By-and-by, however, when all these embankments have been planted, and the land about it has been brought into cultivation, the

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\* *Fortnightly Review*, 1869, p. 211.



driftings will disappear. The same intelligent reporter states that the amount of dredging for this cause that the Company in 1869 calculated upon as an annual charge, was set down at 520,000 cubic yards. As this was one quarter of the amount they accomplished every month during the construction, it could not be a very serious burden.

§ 7. *Serapeum.*

Passing over for the present the various interruptions which the works encountered, we may now complete our survey of the whole Canal.

The lower section offered less difficulties, as well from the familiarity of the labourers with the work, as from what has been already referred to, and the introduction of a different mode of excavation. This was offered by the Fresh-water Canal, which now had touched Lake Timsah. Its level was indeed some fourteen feet above that of the sea as well as of the future Canal—which might have seemed an awkward difficulty ; but this was easily got over by a system of two locks, which united with the Canal above the lakes. When Sir J. Hawkshaw visited the works in 1862, he found the continuation

of the Fresh-water Canal from Ismailia to the coast being prosecuted, nine thousand men being employed upon it ; and he was led to believe that it might be finished within a few months. The waterway from end to end would be thus available for the transport of materials, and it was proposed to use them for carrying stone from the quarries of Geneffè up to Port Said. But it was to serve another purpose. It will be recollected that this portion of the Canal comprised a cutting through two plateaux—those of Toussoum and Serapeum, then a passage through the Bitter Lakes for twenty-four miles ; then a last cutting through the Chalouf height, after which came a level sweep of twelve miles to Suez.

It was thought that by forcing the Fresh-water Canal into the barely indicated channel of the Maritime Canal, so far at least as the first plateau, the dredgers might be introduced. Sir John Hawkshaw was strongly opposed to this plan on the ground that they would require all their dredging power for the upper and more advanced section, and from the danger of encountering rock, which it would be difficult to deal with under water. He was strongly impressed with this conviction from the presence of the rocky promontories before alluded to, that

stretched away eastward, and might discover themselves below. Borings had indeed been made all along the Canal at regular intervals, but he urged that nothing was more capricious than the result of such experiments.

With much exultation De Lesseps in 1865 told his Lyons audience, "that during the eight years they had been exploring and working the line, almost foot by foot, they had never come upon a single layer of rock—unless it might be a very friable marl in the El Guisr cutting." He was also inclined to confess that close to Suez, in the Chalouf cutting, they had encountered a regular ledge of rock, but that the engineers had made a short curve and avoided it. In this pleasant strain he was wont to be merry at the expense of such prophets as Sir John Hawkshaw. But the latter's sagacity was vindicated in what had nearly proved to be a disastrous fashion. For at the last moment, on the very eve of opening the Canal, a mass of rock was discovered which had escaped notice, and which by extraordinary exertion was removed. And it will be seen presently, that a stratum of rock was concealed in the Chalouf cutting, exactly as Sir J. Hawkshaw had predicted. It was stated, however, that the cutting in the Serapeum

plateau offered the most extraordinary difficulties, which the contractor was unable to overcome. Manual labour having failed to make the enormous cuttings, the contractor almost gave up the project in despair, and returned to Cairo to think it over. After a few days' meditation he called his assistants, and said, "I have thought of the means of disposing of the Serapeum; we can do it with our dredges." He banked up the Canal at the point to which the Mediterranean water had been brought, scooped out the remainder to a certain depth by manual labour, banked this up at the end next the Bitter Lakes, and turned the Fresh-water Canal into the excavation. "Then," says Captain Clerk, "the dredges were brought into play—dredges which were originally forwarded by means of the Maritime Canal from Port Said to Ismailia. There they were passed through the locks into the Fresh-water Canal, which raised them seventeen feet above the sea-level. A cross-cutting was then made from the Fresh-water Canal to the line of the works on the Maritime Canal, by which the machines were floated into their respective positions at this superior elevation. The dredgings were conveyed by lighters into large artificial lakes, which have been formed for this special pur-

pose in close proximity to the Maritime Canal. These lakes were made in November, 1866, the level of the Nile then being at its highest point at that season. They contain upwards of 5,000,000 cubic yards of water, and are capable of receiving 2,800,000 cubic yards of dredgings. The lighters here employed have a very shallow draught of water, and wide overhanging sides, out of which the dredgings are discharged. When these dredges (of which nine are here at work, two *à long couloir*, and seven with lighters) have dredged to the requisite depth, the communication with the Fresh-water Canal will be closed, and the dam in the line of the Maritime Canal removed. By this means the level of the fresh water will fall to that of the sea-level, and the dredges, descending at the same time, will continue at work in completing the channel to its prescribed depth. The water having got thus far, having first come to Lake Timsah, then on to Toussoum, was not allowed to proceed farther, and until the time of opening the dam was retained in its place. The rest of the work was excavated *à sec*."

§ 8. *The Bitter Lakes and Suez.*

These, as was before noticed, are the only waters along the line deep enough to save any labour; though this assistance was but paltry, there being an extent of only eight miles where the natural depth exceeded what was required. The lakes include the Greater and the Smaller, and are large expanses of water. The Greater Lake is embanked at its northern and southern portions, the centre being marked with buoys. On this section at one time no less than 3500 men were employed. It was at the bottom of these lakes that there was found that extraordinary bank of salt seven miles in length by five in breadth, and which, it was feared, would have to be dealt with like rock. However, it turned out that it was easily dissolved.

After this came Chalouf hill, which gave much trouble, and the cutting through of which was left almost to the very last. It was fortunate that the system of dredging had been thought of here, since after excavating very deep an enormous mass of rock was reached, which below water it would have been a costly affair to remove; 52,000 cubic yards of this

material were removed by blasting.\* Fossil remains of sharks were found. As the time drew near for the opening, the work was pressed on with redoubled vigour. "Thousands of men were employed—Dalmatians, Greeks, Croats, negroes from Nubia, and Egyptian Fellahs, all superintended by French officers. These gangs of men were regularly organized and paid according to the cubic feet of earth they dug out, some earning five or six and others only two or three francs a day. The works were pushed on with great rapidity, steam-traction on railways, asses, mules, men, and camels, all contributing towards their completion."

Twelve miles more bring us to the end of the journey to Suez, the few miles near the sea were dredged, and, strange to say, in fresh water; a junction being made with the Fresh-water Canal, the whole being dammed up. This fresh water made the dredgers independent of the tides.

The native Egyptian might rub his eyes and think an enchanter had been at work as he looks on this town, changed within a few years from a miserable squalid settlement. Now there are great sea works,

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\* Captain Clerk, *supra*.

piers, quays, sheds, dry docks, warehouses, railways—all laid out on the most spacious scale. "Not more than four or five years ago," says Captain Clerk, "Suez was an insignificant Egyptian village, containing 4000 inhabitants, but exhibiting no signs of life, except when the steamers of the Peninsular and Oriental Company, and subsequently those of the Messageries Impériales, were embarking or disembarking their passengers and merchandize. The absence of water, and the dearness of provisions, both of which had to be brought from Cairo and the surrounding districts, rendered it as uninviting a spot as can well be imagined. The advent of the Fresh-water Canal has brought about a marvellous change. The population has now increased to 25,000, and there is a degree of life and activity about the place clearly indicating the energy that is being displayed on all sides. The principal operations of the Company consist : firstly, in constructing a mole, 850 yards in length, at the mouth of the Canal, to serve as a protection against southerly gales, and against the action of the tide at high water ; secondly, in dredging to the requisite depth the channel leading from the Canal to the anchorage in the Roads of Suez ; and thirdly, the reclamation



of land. The mole, which projects from the Asiatic shore, is now nearly completed. It has been constructed with a kind of calcareous rock, which is quarried on the western shore of the bay. After entering the sea, the embouchure of the Canal gradually widens to about 300 yards, and the depth in this portion is to be 27 feet. No rock has been found to interfere with the dredging, and but little work remains to complete this important part of the Canal. Regarding the third and last point, the dredgings from the channel in the Roads of Suez are employed for this purpose. Embankments, faced with the same kind of stone that has been used for constructing the mole, are first built. Alongside are moored dredges à *long couloir*, and by means of these ducts the dredgings are lodged behind the retaining embankments. This process is continued till a considerable elevation above the sea-level is obtained. Much land has already been reclaimed and built over, and the area is daily being extended. At a future date this property, of about 50 acres, will become of great value to the Company, for the requirements of shipping on its way through the Canal.

“On the south-western side much has been also accomplished. One important work is the dry dock,

which has been in use some years. This work was not carried out by the Maritime Canal Company. An arrangement was entered into between the Egyptian Government and the Messageries Impériales Company, by which the latter undertook to complete it for 240,000*l.*, with the following dimensions :—Length 415 feet, width 85 feet, and depth 29 feet, thus affording docking accommodation to the largest class of steamers. On the harbour side a double basin has been made, where there is a sufficient depth of water for vessels to lie alongside. Of the two piers already constructed, one is reserved by the Egyptian Government for their exclusive use ; the other, on the northern side, is free to all, and they are directly connected by a railway, running along a jetty three-quarters of a mile in length, with the present terminal station in Suez. Passengers and merchandize will thus pass from the train into the steamer moored alongside the quay.”

#### § 9. *Mode of Working.*

When our projector at a late stage of the works was deprived of the assistance of the forced labour, he set to work to reorganize his operations on a new

system. The line had been let out in portions to great contractors, one of which was taken by an Englishman named Ayton, and other portions by MM. Borel and Lavalley. By the loss of the native labour these arrangements were thrown into confusion, and from the increased expense it was found impossible to carry them on. The Englishman became bankrupt, was released from his engagement, and his share, and indeed the chief burden of the whole fell into the hands of the French contractors just named and M. Couvreux. One of these contracts was for no less a sum than four millions sterling. The increased cost amounted in one instance to a difference of a quarter of a million.\* To compensate, however, for this loss, was the indemnity awarded by the Emperor, amounting to a sum of about a million and a half sterling.

The curious spectacle was now witnessed of a rush of able-bodied European workmen, arriving from all parts of Italy, Belgium, France, England, to give their services.

"Most of the workmen," says Captain Clerk, "are again *les indigènes*, but coming now as

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\* "Conference," 1865, p. 74.

volunteers, and attracted by the good and certain wages which they can earn. The greater part of the excavation is accomplished by piece-work, from which excellent results are obtained. The engineers measure the quantity of earth to be removed, and name the price that will be paid for the work, making due allowance for the nature of the soil, and the distance it has to be transported. All requisite implements are provided by the Company. The price is such as enables the labourer to earn from 1s. 6d. to 2s. 6d. a day ; but usually he manages to make more than the minimum sum, and generally has completed his task before the stipulated time. Gangs are formed, as much as possible, of men of the same nationality. The prospect of speedy remuneration acts as a powerful incentive to zealous labour. The indolence of any one member of the gang would cause confusion and delay in the regular circulation of the tram-waggon and carts ; the men, therefore, take good care that all the members of the gang perform their fair share of the allotted task. At first there was some difficulty in getting the *indigènes* to use the wheelbarrow ; so much so, that some commenced by carrying them on their heads. They were in the habit of using either a small

basket, holding only a few handfuls of earth ; or one shovelled it into a sack, whilst another carried it away. As for their nightly accommodation, the *indigènes* are easily satisfied. They procure two planks, which they place on the ground in the form of the letter A. Wrapped in their blanket, they creep into this triangular space, and thus make out the night quite to their satisfaction. The French have, not inappropriately, given these primitive abodes the name of ' Bonnet de police.'"

Mechanical devices, as will be shown presently, of great originality and power, that supplied after wants of human labour, were soon at work. Among these were some novel machines known as *Elevators*. M. Voisin was the chief engineer at the time, but the work was fortunate in having as chief contractors two men of extraordinary energy and fertility of resource, Borel and Lavalley, who took over the work in 1865. They came to the task under every disadvantage, had to establish their own workshops and set up machinery all in the desert. These clever men saw at once that the new difficulties as to procuring labour, and the limited time allowed by the contract, could only be overcome by the aid of machinery of the most daring and novel kind, and

powerful in its effect. They accordingly devised those extraordinary dredges which have been the admiration of engineers, and these inventions show the admirable fertility of resource that regulates the work of foreign engineers, who devise machinery to suit the difficulties of each stupendous work. Whereas in this country, the objection is often made to such undertakings that engineering does not furnish means to accomplish it. However this may be, the Mount Ceniz Tunnel and Suez Canal are excellent instances in point, the difficulties themselves prompting the discovery of means to overcome them.

No one who has seen an ordinary dredge at its slow work in an English river could have an idea of the bold fashion in which the principle was now applied. "These dredges," says Captain Clerk,\* "vary in size, according to the work for which they are required, and the ulterior disposal of the dredgings. Those more recently constructed are much larger and more powerful than those at first employed. The lesser ones are 15-horse power; there is also an intermediate size; and then follow the largest machines of 75-horse power, 110 feet in

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\* *Fortnightly Review*, Jan. 1869, p. 97.

length, with 27 feet beam, and having their drums 48 feet above the water-line. The cost of these is 20,000*l.* each. If the dredgings are required, as at Port Said, for reclaiming land, or for making concrete blocks, when raised from the water they are made to fall into large boxes, having a capacity of four cubic yards. Seven of these fit into a barge, which is moored under the spout of the dredge. When all are filled, the barge is floated under a steam crane, by which the boxes are lifted out and placed on trucks, running on tramways. On arriving at their destination, one end of these boxes opens on hinges, and the contents are thus readily deposited. The greater portion of the Port Said dredgings are, however, conveyed in large sea-going barges (twin screws of 30-horse power) some four or five miles out to sea, and there dropped into deep water. These barges are 140 feet long, with a beam of 23 feet. The dredgings are discharged by means of twelve trapdoors, at the bottom of the barge, the opening and closing of these being regulated by chains. These barges are in use in the ports, and in some of the lakes; but a large proportion of the dredgings is discharged from the machines into either an apparatus which has been named the *long*

*couloir* (long duct), or into the *élevateur* (elevating duct).

“ One of the most important machines is the *long couloir*. These *couloirs* vary in length, the longest being about seventy-five yards. Their shape is that of a semi-ellipse, five feet wide and two feet deep. They are supported by a tall iron framework resting on the deck of a barge, ninety-six feet long by twenty-eight feet beam, and drawing six feet of water. The slope of the duct is inclined according to circumstances. The dredgings, when dropped into the elevated end of the long duct, are assisted in their downward progress by a strong current of water, which is supplied by a rotatory pump worked by a separate engine. In addition to this, when the dredgings are found to be of an excessively tenacious nature, *balayeurs* (scrapers or sweepers) are employed. This apparatus consists of an endless chain which is made to pass along the centre of the *couloir*; on this scrapers are fixed at intervals, fitting the shape of the *couloir*. The dredgings are acted on by these much in the same manner as the floats of a paddle act on water. With the assistance thus given, and the current of water, the *long couloirs* can deliver their dredgings almost on the horizontal line.



This application of water-power has proved a most useful adaptation to the general requirements for the disposal of the dredgings, and has amply compensated for the slight extra expenditure which it at first entailed. Besides facilitating the discharge of the dredgings from the lighters, when thus reduced to a semi-liquid condition, it also, in a great measure, prevents the soil from sticking in the joints of the trapdoors, which necessarily fit with great nicety. Another most useful result is that it causes the dredgings to spread themselves over a more extended surface, and in consequence it settles down firmly, and at a low angle. The longest *couloirs* are used with the largest class of dredging machine. The upper end is then about twelve yards, and the lower about six yards, above the water-line: thus easily clearing the low banks previously formed by the smaller dredgers, when excavating the channels in which these large machines are intended to work. The float which supports the *long couloir* is fastened by chains to the hull of the dredger. By this means the direction of discharge, as also its distance from the bank, can be readily altered. With the aid of a *long couloir*, a dredger can work in the centre of the Canal; and by one movement the dredgings are

deposited at a considerable distance beyond the water-line, on either side, as may be required.

“ The shorter *couloirs* are placed on the dredging machine itself, and are balanced by a counterpoise on the opposite side. In situations where the advanced stage of the works brings the dredgers too far below the summit level of the embankments to render the *couloir* any longer available, the *élévateur* is introduced. This machine somewhat resembles in principle the one just described, but the inclination of the plane is in the opposite direction—that is to say, upwards instead of downwards. This duct consists of an inclined plane, about fifty-two yards long, and carrying two lines of tram rail. The inclination is one in four, and it is supported in the middle by an iron frame, which rests on a carriage, running on rails laid for the purpose along the bank of the Canal, at an elevation of six feet above the water-line. The lower end of the *élévateur* reaches over the water, where it is again supported on a steam float. When this machine is at work, the lower extremity of the duct is three yards above the water; whereas the upper end is about fifty-two yards distant, with an elevation of twelve yards, thus reaching over the embankments. A lighter, containing seven

boxes of dredgings, is floated under the lower extremity of the *élévateur*. Each box is raised in succession on to a truck by an endless steel-wire rope, which is adjusted in a few seconds, and it then travels to the upper end of the incline. On reaching this point the box swings vertically, when, by a self-acting contrivance, the door opens, and the contents are thus completely emptied. The empty box then runs down, suspended by its hook and chain, on the under side of the line of tram-rails, which it previously traversed on its upward course.

“On such parts of the work as are being carried out, either by manual labour or any other means, where the water is not as yet introduced, there are about twenty inclined planes. In these tramways are laid along the bottom of the cutting, or rather valleys, as these deep excavations through the plateaux might more appropriately be called. Mule-trucks convey the excavated soil to the foot of the incline, whence they are run up by an endless rope, worked by an engine which is stationed at the head of the incline. As the laden truck ascends, an empty one descends to the foot of the incline, where a team of mules is in readiness to run it back to the point of excavation.”

There were some fifty of these powerful machines employed along the course of the Canal, whose consumption of coal came to a total of 40,000*l.* each month. Their cost was nearly two millions and a half.

Another account gives a clearer idea of these curious engines. "There is a different kind of mechanical apparatus, called the *drague à long couloir*, which is used in immediate connexion with the dredging-vessels, where the banks are not so high above the water. The dredges are furnished with iron buckets, fastened to an endless chain revolving over two drums; one being fixed at the end of a long moveable arm, regulated by the depth at which the mud is scooped up; the other being at the top of a strong iron framework mounted upon the hull of the dredging-vessel. They vary in size and power, the smallest being of 15-horse power, and the largest of 75-horse power. The boxes, or caissons, have each a capacity of four cubic yards, and seven of them fit into one of the attendant punts. One end of a box is made to open like a door on hinges, so as to let its contents run out when lifted by the elevator, and carried up the tramway to the other end, when it is discharged. The elevator

is an inclined plane, about fifty-two yards long, carrying two lines of rail. It is supported in the middle by an iron frame, which rests on a carriage, moveable upon rails laid for the purpose along the bank of the Canal, at a height of six feet above the water. The lower end of the elevator reaches over the water, and is supported by a steam-float. When the machine is at work, the lower extremity is three yards above the water, while the upper end has an elevation of twelve yards, reaching far over the embankment. Each box of earth is lifted from the punt by a steel-wire rope, and placed on a truck which carries it to the upper end of the incline. Having reached this point the box is suspended vertically, when its end-door opens, so that it empties itself on the ground beneath. The empty box then runs down the other line of tramway, and is returned by the punt to the dredging-vessel. The *long couloir* or long duct, is of curved or half-elliptical form, sometimes seventy-five yards long, but often smaller, with a slightly inclined channel five feet wide and two feet deep, which is supported by an iron framework on the deck of a barge; a steam-pump keeps a stream of water flowing through this channel, by which the dredged-up matter, when dropped into its

upper end, is carried off and cast ashore on the bank of the Canal ; this process being aided in some cases by the action of the *balayeur*, an endless chain passing along the centre of the channel and bearing a number of iron scrapers to remove the half-liquid slime and mud. By means of the *long couloir* which has a reach of seventy-five yards, the dredge can work in the very middle of the Canal, and, with a very easy movement, can deposit its dredgings, almost horizontally, or at a moderate elevation, well beyond the water-line on each side. The float or barge, which supports the *long couloir* in the water, is fastened by chains alongside the dredging-vessel.”\*

“Our dredging machines,” says M. de Lesseps, “of which the ducts were one and a half times as long as the column in the Place Vendôme, carried off from two to three thousand cubic metres a day ; and as we had sixty of them, we succeeded in extracting monthly as much as two million cubic metres (about 2,763,000 cubic yards).

“This is a quantity of which no person can form an exact idea. Let us try to realize it by com-

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\* *Illustrated London News*, April, 1869.

parison. Two million of cubic metres would cover the whole of the Place Vendôme and would reach an elevation of five houses placed one on the top of the other. It took four months for the 400,000 cubic metres of the Trocadero, while we dug out two millions in one month."

In short, the dredge *à couloir* was a sort of mud pump which discharged the "stuff" excavated on to the bank through a long tube instead of into lighters. The "elevator" took the place of the gigantic crane we sometimes see at work in harbours, and which hoists out the boxes of mud from the lighters, and swings them round to be discharged into the sea at the other side. It seemed a shorter process to have a railway up the frame of the crane, and hence was derived the idea of the elevator.

Gradually these engines were introduced at intervals all along the hundred miles of the Canal, and it was not unpicturesque to look upon from the busy docks of Suez, and follow the lines of the Canal winding off into the desert, marked at short intervals by their double chimneys with their curling smoke, and showing how diligently the work was being prosecuted.

As the dimensions of the Canal, that is its breadth

and depth, were only determined as the period for opening drew near, this may seem the proper place to examine this question. In nothing does there seem to be so much caprice as in this matter. The English Canals are singularly narrow, and the Irish broad; while some of the Belgian Canals, notably the one from Ostend to Bruges, are magnificent for the spaciousness of their proportions. The practical breadth of a canal is its breadth at the bottom. The Suez Canal is virtually of the same breadth—viz., seventy-two feet from end to end, though for seventy-seven miles it is apparently nearly double the width. The scale of these two sections is as follows: the smaller dimensions it will be seen were adopted for the heavy cuttings, to save expense. On the eve of the opening the Canal had been excavated according to one or other of the following sections:—

1st. 196 feet in width at the surface of the water, and 26 feet deep for 72 feet at the bottom. The slopes are 2 horizontal to 1 vertical, with one or more horizontal benches of 10 feet in width, according to the depth of the cutting.

2nd. 327 feet in width at the surface of the water, and a similar depth of 26 feet for a similar width of



72 feet at the bottom. The lower part of the excavation is also 2 horizontal to 1 vertical, but the slopes above and below the surface of the water are 5 to 1, and a horizontal bench of 58 feet connects the two slopes.

“The work was carried out with reference to these two sections in the following manner :—

According to the first section :—

	Miles.
From near El Ferdane to Lake Timsah	9½
From Lake Timsah to the Bitter Lakes	7½
Through the deep part of Chalouf Cutting	5
	<hr/> 22

According to the second section :—

Port Said to near El Ferdane	37
Through Lake Timsah	5½
Through the Bitter Lakes	23½
At the Suez end of the Canal	11
Total	<hr/> 77

Through Lake Timsah and the Bitter Lakes the lower portion only of this section is required to be excavated, in consequence of the low level of the ground.

“It will be observed in the description of the

second section that the slope at the surface of the water is flat (5 to 1), and provision is now being made for protecting this slope with rough stone pitching, trimming the upper slopes, and otherwise treating it as a finished work. This may be safely done, because that section is so arranged that the Canal may be widened at any subsequent period without disturbing any of the work already done. With the first section, however, the case is different. This section has been adopted in the deep cuttings to effect the largest saving possible in the quantity of excavation ; and therefore, if a future widening of the Canal is required, one or both side-slopes must be thrown back, and a considerable portion of the present work interfered with. The reduced width is adopted, as we see, chiefly in those parts where the Canal has to be cut through platforms of high ground, as in the El Guisr cutting, nine miles long, the Serapeum cutting of seven miles, and the Chalouf cutting of five miles. The slope of the banks, above the water-line is about 1 in 5, which is diminished below the water to 1 in 2.”\*

This may be made more intelligible by stating

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\* *Illustrated London News*, April, 1869.

that in the apparently wide section the profile of each bank takes the shape of a broad step, each about seventy feet wide ; while over each step there is but a few feet of water. Dredges working over these steps could dredge down to the bottom. But the real width of the Canal in reference to the draught of water required is to be measured as by the breadth at the bottom, which is just 72 feet.\* Here, too, may be considered the interesting question arising out of the proper depth of water for the channel, as regards which many prophecies were ventured. It will be most convenient to give the portions of the report of the two officers, Captain Richards, of the Royal Navy, and Colonel Clarke, of the Engineers, whom the English Government despatched to inquire "to what extent the Canal may be expected to be available for the purposes of her Majesty's naval service?" This investigation was made in a very thorough fashion in February, 1870, and their report was highly favourable :—

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\* Sir John Hawkshaw advised reducing the breadth of the whole Canal to about 250 feet in the widest section, and to 150 feet in the narrower. He also objected to the angle of the slope below the water-line, which he said should be as 3 to 1. He estimated the saving at about half a million.

“Sailing from Alexandria at noon of the 29th January, 1869, Port Said was reached early on the morning of the 30th; on the passage were passed the three iron pile lighthouses on the Rosetta mouth, Brulos Point, and Damietta entrance of the Nile, which are all but complete, and when lighted will prove most useful guides to vessels passing along this low and shallow coast, where the currents are uncertain, and after westerly winds sometimes attain a velocity of two miles an hour, with an indraught setting strongly into the bights: on this account vessels will do well not to approach the shore nearer than seven or eight miles. The high light of Port Said, which stands at the inner end of the western breakwater, was seen at a distance of twenty-five miles; and bringing it on a bearing S.W.  $\frac{1}{2}$  W., we steered in on that course, passing the end of the western breakwater, within a quarter of a mile, in five fathoms of water, and then between the buoys which mark the channel, into the inner basin, carrying 25, 26, and 27 feet of water, occasionally 28 feet, where the vessel was secured to the mooring buoy of the Messageries Impériales. No time was lost in communicating with the English Vice-Consul, who introduced us to the Egyptian

Governor, and to the officials of the Canal Company—viz., M. Pointel, Captain in the French Imperial Navy, chief of the transit and navigation departments at Port Said, and M. Blondel, at present the resident chief engineer for the whole of the Canal works. From these gentlemen we received the most ready offers of assistance, and a promise that the whole of the drawings and other documents in their possession should be placed at our disposal. The whole length of the Canal from the high lighthouse at Port Said to its junction with the Red Sea at Suez may be stated, as nearly as possible, at 88 geographical miles ; of this distance 66 miles are actual Canal, and 22 miles of the navigation runs through the three lakes—viz., Timsah, and the great and small Bitter Lakes ; excavations had to be carried out, however, throughout the whole length of Lake Timsah ; of the small Bitter Lake, and a portion of the great Lake, leaving a distance only of eight miles in the latter, where the natural depth exceeded that of the Canal, and where, consequently, none were necessary. The width of the Canal at the surface, throughout the greater part of its length, was finally decided to extend to 325 English feet, having a floor 72 feet wide in the centre, with a

depth of 26 feet, sloping up 2 to 1 till within 5 feet of the water surface, where the section is for 50 to 60 feet, either level or with horizontal benches, ending in slopes of 5 to 1. At three places, however, where its course runs through high ground, and where the labour of removing the soil would have been attended with very great expense, and occupied a considerable time, the width has been reduced to 195 feet, with slopes of 2 to 1; these three spots occur in the neighbourhood of El Guisr, Serapeum, and Chalouf, and are respectively 8,  $5\frac{1}{2}$ , and 4 miles in length, making in the whole about 18 miles of narrow cutting. It will thus be seen that the Canal was generally to have a waterway 26 feet deep for a width of 72 feet, 20 feet deep for 95 feet; and 15 feet for a width of 112 feet. In order to test to what extent these intentions had been carried out, it was necessary to make accurate sections of the Canal throughout its length, and fifty-two of such sections were made accordingly, exclusive of eight which were subsequently taken across Port Said. The results proved that on the whole, with a few exceptions to be noticed presently, the work had been fairly completed according to the original, or, rather, the modified design; and though it is not to

be doubted that the opening was probably in some degree premature, and that though much remains to be done to improve and facilitate the transit, especially for large ships, yet it is at the present moment undeniably a navigable Canal for vessels of considerable draught and tonnage, and its success has probably far exceeded the most sanguine expectations of its warmest supporters. It must not be understood that there is the exact depth and breadth uniformly throughout the Canal which it was the intention of the engineers there should be ; the deepest water, for instance, as shown by our sections, is not always precisely in the centre, nor is there always the exact width which was laid down ; occasionally it is less, in some cases even greater ; but the depth does not differ more than was to be expected under the circumstances, or so much as materially to affect its practical value, with the exception of the cases now to be noticed, and which are in course of being remedied. The first of these faults, and where a dredger was at work removing it, occurs 33 miles from Port Said, between Kantara and El Guisr ; here the greatest depth is 22 feet, but only for a width of 30 feet ; and for a width of 80 feet, a depth of 20 feet only can be com-

manded ; this occurs at Lake Ballah, where there is no eastern embankment to the Canal above water. The second bad place occurs  $44\frac{3}{4}$  miles from Port Said, just where the Canal proper commences, at the south end of Lake Timsah ; here also 22 feet is the greatest depth, and that only at one spot ; 20 feet can be carried for a width of 55 feet, and 18 feet for a width of 72 feet. A dredge was also at work deepening this spot. The Serapeum rocky section forms, or rather did form, the next and greatest difficulty. The thin stratum of gypsum, which extends more or less along this section, at a depth of 17 feet below the water-line, suddenly increased for a length of about 80 yards, from a few inches to a thickness of 7 feet, and which, lying between two trial borings, was unfortunately not detected till after the water had been let in, and close on to the time fixed for the completion of the works. When discovered, there was scarcely 17 feet of water over it, but at the time of our examination it had been almost removed by blasting and dredging ; three dredges were at work, and we witnessed huge blocks of the stone being brought up by the buckets, to the no small damage of the latter, which were split and broken through the tearing away of



the rock by the powerful steam machinery. The efforts indeed which were being made to remove this difficulty were very great, regardless of every obstacle ; and some sections with which the engineer was good enough to supply us, confirmed by some eight we made ourselves, left no doubt that they had all but been overcome ; and we have every reason to conclude that since our visit this part of the Canal, as far as depth is concerned, has been made equal, if not superior to any other. At the distance of a mile south of the Serapeum operations, or  $51\frac{1}{2}$  miles from Port Said, at section 35, there is another shallow place, where 22 feet is the greatest depth for a width of 50 feet ; for a width of nearly 70 feet, not more than 20 feet can be carried ; and for a width of 80 feet there is no more than 18 feet ; this obstacle was to be removed by the dredges immediately. The last weak place to be noticed is within three miles of the Suez entrance of the Canal, and here not more than 23 feet was found, and for a width of 50 feet no greater depth than 22 feet ; this, however, was at low water, and it is to be borne in mind that at this end of the Canal a rise and fall of the tide may be depended upon to the extent of from 4 to 6 feet. A dredge was at work improving

this part, which at present is probably the most imperfect portion of the Canal. Independently of the weak points which have now been described, some of which have been already remedied, and all of which it may fairly be expected will be so within three or four months from the time of our visit—early in February—the next difficulties are the curves, five in number, in passing most of which great care and attention will be necessary in piloting a long vessel. The first occurs immediately after entering the Canal from Port Said, but it is so moderate that there is little difficulty in passing it. Two others occur between Kantara and El Guisr; the latter, just before entering Lake Timsah from the north, is the sharpest in the Canal, and is in course of being widened. The fourth is also rather a sharp turn, and is near the south end of the Little Bitter Lake. The fifth and last is within two miles of Suez. Otherwise the channel is straight; and with the exception of about two miles on the eastern side of the Canal at the south end of Lake Ballah, nearly the same distance on its western side at the southern extreme of Lake Timsah, as well as throughout the whole extent of the three lakes, there is a solid dry embankment, varying in height from about 5 to 10

feet in the flat part to 50 or 60 in the higher portions. Throughout Lake Timsah, and from where the embankment terminates at the north end of the Great Bitter Lake to the lighthouse at the north end of the lake, a distance of about  $1\frac{1}{2}$  miles, also from the lighthouse at the south end of the lake, throughout the length of the Little Bitter Lake, to where the embanked Canal again commences, the deep channel is marked by conspicuous iron beacons on either side; these beacons are 250 feet apart, and the deep water channel between them is the same in width as in the rest of the Canal; but in practice it is found more difficult to keep in the centre while passing through these beacons than it is when between the embankments. The iron pile lighthouses at the north and south ends of the Great Bitter Lake are eight miles apart, and visible the one from the other. In the space intervening the water is two or three feet deeper than in the Canal; and ships are not therefore obliged to follow any direct course through the lake, but may proceed or anchor as convenient. At every five or six miles between Port Said and Lake Timsah—the whole distance being 42 miles—there is a *gare* or siding to allow large vessels to bring up in either for the

purpose of passing each other, or to moor for the night. These *gares*, which are temporarily marked by posts driven into the banks, are merely extensions of the width of the floor of the Canal under water, and are not sufficiently capacious, but they will, it is stated, be enlarged. That at Kantara, 24 miles from Port Said, is exceptionally large, and can accommodate three large vessels.

“The pilots are of course well acquainted with the positions of these sidings. There is, or is to be, a telegraph station established at each of them, with a competent nautical official, who is to regulate the movements of passing vessels, according to directions which will be communicated by telegram from Port Said, Ismailia, or Suez. Telegraph wires are established throughout the length of the Canal.

“The best stopping places for ships after nightfall, and during sand drifts, or high winds, when the passage of the Canal would be attended with risk of grounding, are the Kantara *gare*, Lake Timsah, and the Great Bitter Lake, which are respectively 24 miles, 42 miles, and 56 miles from Port Said. Lake Timsah at present has not more than 21 and 22 feet of water; and with a long ship some difficulty is experienced in entering the channel of the Canal

from the Lake. A sufficient portion of the Lake is to be improved to render it a convenient stopping place. Such, then, is the present state of the Canal. The second clause of our instructions, respecting the works proposed to be carried out in connexion with it, is now to be considered. From M. Guichard, the chief authority on the spot, we learnt that when the Company took over the works from the contractors they were quite aware of the weak points detected by us in our examination, and decided on completing the undertaking themselves, for which purpose, and also to maintain the Canal in a navigable condition, eight powerful dredges, and a proportionate quantity of mud-hoppers and other plant, have been permanently retained. It was intended to proceed immediately with the improvement of those points to which we have alluded as faulty, by reducing the sharpness of the curve at El Guisr, widening it and the other three 'curves of danger' to 130 feet at the floor of the Canal, and making the channel from the entrance of Port Said to the inner basin 30 feet deep, as well as increasing its width. In effecting the improvement of the curves, it is computed that about 451,000 cubic yards of excavation will have to be

made, and a further removal of 1,100,000, it is said, would go far to perfecting the Canal; but the latter, being regarded by the Company as unnecessary for the actual requirements of navigation, is not likely to be undertaken at present. It is also intended to mark the banks of the Canal by conspicuous beacons at every mile, instead of by the temporary kilometre marks which now exist only between Port Said and Lake Timsah. At every cable's length, or tenth of a mile, substantial pillars or bollards, for securing ships and heaving them off, are to be embedded in the banks on both sides; and the limit of 16 feet depth of water is to be marked on either side by buoys at a distance of a fifth of a mile from each other, or 400 yards apart; these buoys to be moored with a chain and sinker, and further secured by a second chain to the pillars on shore. We were assured that these pillars and buoys were being prepared at Trieste, and within four or five months would be in their places; if so, the advantages and convenience to passing vessels will be considerably increased, for the great drawback at present is the want of appliances for heaving a vessel off of the ground, or of making her fast should it be necessary to stop. It is expected that the whole of the improvements

above mentioned will be completed by the close of the present year, the more especially as we have been informed by M. de Lesseps himself, subsequently to our visit, that there is not to be any delay in commencing them."

As to the question of a current through the Canal, it was anticipated that the difference of level between the seas would have produced a sort of fall. This, it seems, has been neutralized by the great lakes, which act as water "buffers." On this point the two officers say :—"The difference of level of the two seas, so far as it has had any effect in producing a current one way or the other, is inappreciable. The tidal observations which we were able to make were necessarily somewhat imperfect from want of time, but they were made at that period of the moon's age when their effect would be greatest. The results show that in the southern portion of the Canal, between Suez and Great Bitter Lake, the tidal influence from the Red Sea is felt, there being a regular flow and ebb, the flood running in for about seven hours, and ebb running out for five hours. At the Suez entrance the rise at springs, unless affected by strong winds, is between five and six feet; about halfway from Suez to the Little Bitter Lake, a distance of

six miles, it is under two feet ; at the south end of the small Bitter Lake, a few inches only ; while at the south end of the Great Lake there is scarcely any perceptible tidal influence. We were informed by the authorities at Ismailia that since the Great Lake has been filled, the level of Lake Timsah, which was filled from the Mediterranean in April, 1867, has risen twelve centimetres, or about four inches, and that its waters are continually running at a slow rate into the Mediterranean. Certainly this statement agreed with what we ourselves remarked, for we always found a current running northward from Lake Timsah at the rate of from half a mile to a mile an hour. Limited, however, as these tidal observations were, they were taken with great care, and appear sufficient to show that, except at the Suez end, the tides will not materially affect the passage of vessels. At that end, therefore, large vessels must regulate their time of passing. Indeed, the greatest difficulty which will be experienced will be not from the tides, but from the prevailing north-east wind in the Canal, which will make close steerage difficult in going from north to south.

“ With regard to the question of evaporation, it is impossible to say that a hot summer will produce no



appreciable effect on the water of the Great Lake, but it may be fairly predicted that no serious effect will result sufficient to produce a disturbing influence on the general conditions of the Canal, and thereby affect its navigation.”\*

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\* On this point compare Mr. Fowler's opinion :—“ The vast extent of the Bitter Lakes (100,000 acres in superficial area), when connected with the tidal Red Sea by the Chalouf excavation, will produce in the summer months, when the evaporation is greatest, peculiar currents and hydraulic phenomena. The largest daily evaporation or abstraction will amount to about 250,000,000 cubic feet of water, and this will be chiefly supplied from the Red Sea, which is far nearer than the Mediterranean, and has a tidal range of about six feet in spring tides and two feet at neap tides, while the Mediterranean has a far less tidal range. The currents which will thus be created by evaporation and tide will be sufficient to assist or retard navigation, as they will probably approach, if not exceed, two miles per hour, but they will scarcely be strong enough to affect injuriously the bottom or sides of the channel through the Chalouf cutting after the proper protection by stone pitching had been carried out. It is possible that a strong south wind may somewhat increase the velocity of this current by slightly raising the ordinary tide at Suez, and that lateral absorption, evaporation, and waste round the shores of the Bitter Lakes into, and through, the sand of the desert may increase the amount of the water to be daily supplied ; but these disturbing causes will not probably be sufficient to make any appreciable difference in the velocity. It would, however, have been desirable, in my opinion, that the Canal should have been originally constructed on enlarged dimensions between the Bitter Lakes and the Red Sea, if the resources of the Company had permitted.”

Another important question engaged their attention as to whether the banks should be faced with stone. "Even were it advisable," they say, "the great cost and tedious nature of the operation of pitching the banks with stones, which, to be at all effective, would have to be carried below the line to which a ship in passing forces the water to recede, now that the Canal has been filled, precludes the idea of its ever being suggested by us. By 'pitching' we mean lining or covering the banks with stone fairly dressed, and carefully jointed, cramped, and set in cement, or hydraulic lime. Any other method would be useless, and, indeed, a source of mischief, as is apparent from the destruction of the rough pitching or deposit of stone which has been placed along some parts of the African bank, for the protection of the line of pipes conveying fresh water from Ismailia to Port Said."\*

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\* Compare Mr. Fowler's report :—"I believe it will be found necessary to make a proper and immediate protection of the slopes by stone pitching above and below the surface of the water along the whole course of the Canal, if the traffic is to be conducted at a reasonable rate of speed ; and I think the engineers of the Canal Company have already, or nearly, arrived at the same opinion. This work will, no doubt, be executed much more conveniently and economically after the Canal is opened throughout,

They then approach another interesting question.

“We proceed now to the consideration of the question of how far the Maritime Canal is likely to answer its object, what difficulties may be anticipated in its navigation, and to what extent it may be expected to be useful for the purposes of her Majesty’s naval service, including the transport service to and from the East. For all steamships, or vessels towed, ranging between 250 and 300 feet in length, with 35 feet beam, and a draught of 20 feet, it will, with the improvements and appliances earlier described, be a convenient highway. It may, therefore, be assumed that with the exception of the ironclad ship at present stationed in the East, or any unusually heavy vessel, it will be a channel available for the passage to and fro of our Indian and China squadrons. The maximum speed should never, except in the Large Bitter Lake, exceed five miles an hour. This rule should not at any time be departed from, not only to prevent injury to the Canal by the disturbance of the soil of the banks

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and the large quantity of stone required can be conveyed without change; but, on the other hand, it will be more difficult to place the stones below the level of the water, and probably the slopes may have sustained some mischief before the work can be done.”

which greater velocity would occasion, but also to avoid accident to the vessel from striking the ground heavily, as she might do if she touched when going fast, which in the case of a propeller might entail serious damage to the screw.

“All vessels should be steered from the bridge, the pilot being alongside the helmsman, and those of the smaller class should, when approaching or passing each other, reduce their speed or stop, the width of the Canal enabling them, by careful steering, to keep in deep water. For the transit of vessels larger than those described, the Canal is not so well adapted, and special arrangements, such as are observed on a single line of railway, should be made and enforced. The extreme length of such vessels would prevent their passing each other, except at a station ; for any unfavourable circumstance—such as even a moderate wind astern, which would cause a ship to yaw as much as a quarter of a point off her course—would probably place her on shore before she had time to recover her steerage ; and, as there is no rise or fall of tide to float her off again, would necessitate lightening her very considerably—a process, it is needless to say, attended in a merchant ship with inconvenience, and likely

to involve the blocking up of the Canal, causing delay, perhaps of several days, to herself and other vessels. The question of the present Indian transports passing through the Canal with troops demands serious consideration; and there are so many points involved that it is difficult to offer any decided recommendation. That these vessels, which were built for an entirely different service, and are about 400 feet long, with a draught of 22 feet water and beam of nearly 50 feet, can pass through the Canal, is undeniable; but no practical seaman need be told that in steering them through what may be called a continuous dock 90 miles in length, less than 100 feet wide, and with nothing showing above water to mark the centre of it, frequent grounding and consequent delay may be anticipated, though every possible care and precaution be taken. The extreme dimensions of these vessels, combined with the great weight of their hull, upon which the effect of even a moderate breeze in any other direction than right ahead must be very prejudicial to exact steerage, would increase the difficulty of the passage. It is to be considered also, that the midship section of one of these vessels bears about an average proportion of 1 to 4 to a section of the deep

water part of the Canal; she would consequently displace about a quarter of the water in it, and if moving above very slow speed, considerably reduce the depth of water underneath her. As regards the advantages which the Canal will offer to the national and commercial interests of the United Kingdom over the present route to the East by the Cape of Good Hope, two questions arise. The first, to what portions of the globe and to what class of vessels will it offer advantages; the second, what will be those advantages in point of time and money? The answer is, that India, China, and the Eastern Archipelago are the portions of the globe which will be specially affected, and to a certain extent Australia and New Zealand also; and that the class of vessels which will be exclusively benefited must be those with steam power, for the special reason that a part of the Mediterranean and the whole of the Red Sea, owing to the character of the winds, must be considered as essentially steam navigation. The class of steam vessels which have to be separately considered are—

1. Ships of war employed on the India and China stations.
2. The Mercantile Marine.

3. The Troop Service between England and India, either as carried on by the present Indian transports, or by any vessels which may in future be designed.
4. The great lines of steamers carrying mails, passengers, and merchandize, such as the Peninsular and Oriental Company's vessels.

In considering these questions it is necessary to select some point as a standard of comparison in point of distance common both to India and China, that is, a point which vessels bound to either country must pass either near to or in its meridian; and for the purpose we select Point de Galle.

Geograph. miles.

The distance from the English Channel	
(Start Point) to Galle by the	
Canal is . . . . .	6,515
By the usual sailing route round Cape	
of Good Hope it is . . . . .	11,650
The difference in favour of the Canal	
route is therefore . . . . .	5,135

and this advantage may be considered as an equivalent, in point of time, to thirty-six days. A ship of

war bound to India or China, by the present route, generally calls at the Cape de Verde Islands and the Cape of Good Hope, and in the case of China at Singapore, to replenish her fuel, &c. ; by the Canal she would call perhaps at Gibraltar, certainly at Malta, at Suez, and Aden, and if going to China at Singapore, for the same purpose ; and it may be safely assumed that she would use one-third more coals before reaching either station by the Canal route, irrespective of the dues for passing through, which will be considered presently. The mercantile marine may be considered under nearly the same conditions as ships of war, so far as the saving of time is concerned, but their condition being changed from sailing to steam vessels, the whole amount of fuel expended must be taken into account, as well as the loss of carrying power consequent on that change. The shortening of the voyage to China, however, by about thirty-six days, combined with the advantage of submarine telegraphy, will certainly far more than compensate for these drawbacks, and it is not to be doubted but that the Canal route will prove highly advantageous to a class of vessels constructed especially for its navigation.

“ Under the present system of transport forty-



eight hours are occupied from the time of arrival at Alexandria to that of embarkation in the Red Sea, in carrying the troops by rail across the Isthmus of Suez, and it appears to us a reasonable calculation that by the Canal route an average delay of three days might be expected, from the date of arrival of one of these ships on the Mediterranean side to that of her departure from Suez. Thus, then, it seems that, as regards time, the passage through the Canal would not effect any saving ; but if the adoption of that route, with a different construction of vessel, would lead to the reduction of one ship out of the five now employed, and abolish collateral expenses as well as the inconvenience of two transhipments of troops and baggage, it will certainly be worthy of consideration, and, leaving the political bearing out of the question, becomes a matter of expense only, which can easily be calculated. The great lines of mail and passenger steamers, such as the Peninsular and Oriental, come nearly under the same conditions as the troop ships, except in the carrying of merchandize. They would probably land their mails and passengers at Bombay a day or two later by the Canal route than under existing arrangements, but they would save transhipment of cargo, and might

possibly be able to reduce the number of their vessels. Moreover, although the vessels of the Peninsular and Oriental Company are not precisely the class of vessel best adapted to navigate the Canal, yet in this respect they enjoy a great advantage over the present Indian troop-ships. The solution of the question as regards these Companies is, that it will probably be found advantageous at present to adopt both the overland and the Canal routes.

“Any estimate of the comparative cost of the Canal route and the overland transit, or the long sea passage, must of course be based on the present tariff of charges adopted. In this respect no decisive information could be obtained on the spot as to what they will ultimately be fixed at, probably because the Company's officers were unable to afford it. A doubt existed as to whether the dues would be charged on builders' measurement or register tonnage, which has since been decided in favour of the latter; it was uncertain also whether troops passing in ships of war would be considered as passengers. At the present time, however, there are three separate charges levied, viz. :—

10 francs per ton on register tonnage, or exclusive of space occupied by engines and coals.

10 francs a head for passengers.

20 francs per decimetre (4 inches) for vessels over 20 feet draught as a pilotage charge.

“ Therefore, the charges for one of the present Indian transports, taking the register tonnage at 3002 tons, and drawing 20 feet, which she would probably do in passing through the Canal, would be—

Register tonnage . . . . . £1250

For 1200 troops, considered as pas-

sengers . . . . . 480

Pilotage . . . . . 50

Total . . . £1780

as against the present charge for overland transit, which is believed to be between 1600*l.* and 1700*l.*

“ For a vessel of the *Volage* class, the register of which is 852 tons, the charges would be—

Register tonnage . . . . . £355

Pilotage on 20 feet draught . . . . . 50

Total . . . £405

“ Therefore, for a ship of war of the latter description and tonnage, adding 500*l.* for the extra coal

which would probably be consumed, there would be 895*l.* to be placed against a saving of thirty-six days on the voyage to India or China, leaving out of consideration the wear and tear of a voyage round the Cape of Good Hope. Taking these figures as a basis, it would probably be considered desirable to send all small or moderate-sized vessels through the Canal. Keeping, then, in view what has already been said with regard to the physical character of the Canal, and what has now been assumed as to its economy, the preponderance of opinion is against the use of the Canal as a highway for our present type of transports ; but it appears certain that by a different construction of vessel, and without any increase in the number, that object could be accomplished with ease and convenience. This is an opinion which of course may prove fallacious. For the reasons assigned, however, it does not seem advisable that any change in the present system of moving troops between this country and India should be decided on before the commencement of the season of 1871 ; by that time there will be positive experience on which to base a decision, especially if the passage through of the *Jumna* should be determined upon ; and if our anticipations prove correct

in regard to the works still to be carried out, the Canal will be in a far more perfect condition than it is at present.

“We have thus, in accordance with our instructions, considered in detail the present condition of the Suez Canal, and the works to be carried out in connexion with it, as well as the probability of its being available for the purposes of H.M.’s Naval and Transport Services, and have arrived at the conclusion—

1. That for a certain class of vessels this great work, which must always be a monument of persevering energy and engineering skill, as it now stands, is a convenient mode of passage from the Mediterranean to the Red Sea.
2. That it will be so to a greater extent when the works contemplated, viz., the deepening of certain shallow parts, the enlargement of the *gares*, and the widening and improvement of the curves, are carried out.
3. That it is available for the transit of ships employed in the Eastern seas, with the exception of the large ironclads and other exceptionally heavy vessels.

4. That for the present type of Indian transports it is not a desirable route.
5. Further, we think that the cost of maintenance will not exceed the amount estimated for it when the work was first projected.

“We would now briefly advert to the prospects of the Canal as the grand highway for the naval and mercantile marine of Europe to the East. The real drawback to the Canal is its narrowness; and we were informed that, except at the parts mentioned previously, it is not the intention of the Company to give it the additional width, the want of which alone prevents its being pronounced a complete success as a permanent navigable route for the largest ships from sea to sea.

“Had its width at floor been doubled, with a proportional increase to its surface, it might now have been fairly regarded in that light, and its maintenance would have been comparatively easy, just as a great city thoroughfare is periodically renewed by having one-half of its width blocked up; whereas, by closing one-half of the Canal as it now stands, the other would be rendered practically impassable to large ships, and some expedient must therefore be resorted to, such as carrying on the repairs by night, or leaving

the passage open to ships for certain periods only during the day.

“That to increase the width of the Canal would be a perfectly feasible undertaking, the cost of which could be calculated with great accuracy, need scarcely be asserted ; it is, however, we understand, very improbable that it will be undertaken by the present Company ; and that it may eventually become a national or combined international engagement is a question which, depending as it must do on political and other considerations, it would be out of place to discuss here.”

§ 10. *The Dredging Question.—Recent Inspection.*

On this question of keeping the Canal open it will be more satisfactory to note from the Reports themselves of the Canal what repairs and restorations were needed.

In March, 1872, the following was the estimate for the past year :—500,000 cubic yards of dredging, at a yearly cost of 33,000*l*. This was accomplished by three dredgers, with a fourth for Port Said. Lining the banks with masonry for about 12 miles at a cost of about 2000*l*. A further sum of about 1000*l*. was needed for landmarks, &c.

The curves in the Canal were all enlarged to suit the increased length of vessels—these were to the number of six, and several basins were dug in the mainland near Port Said.

At the end of the year 1871 regular soundings were made all along the Canal at about intervals of every 20 yards, when the regular depth of 18 metres was attained.

From June, 1872, to June, 1873, dredging to the amount of only 308,000 cubic yards was needed, which was less by some 35,000 cubic yards than the dredging of the preceding year, at the same time the bottom of the Canal was deepened by this process by about 6 feet.

The dredging required from the “Avant Port,” &c., at Port Said was as follows :—

1869 . . . .	300,000 cubic yards.
1870 . . . .	210,000 „
1871 . . . .	161,000 „
1872-3 . . . .	249,000 „

A new dredge, adapted for the sea exclusively, was ordered.

From 1873 to 1874 the dredging in the Canal attained to 395,000 cubic yards, while 360,000 yards



were dredged from Port Said. This latter was the work of the new marine dredger. This engine cost 28,000*l*. In the year following 450,000 cubic yards were taken out of Port Said.

Finally, in January, 1874, Colonel Stokes, a clever officer, was empowered to make an examination of the Canal. His inspection, being perhaps the most recent of an independent kind, will be found interesting in this place.

*“Physical Condition of the Canal.*

*“Depth.*—The physical condition of the Canal itself appears to me generally very satisfactory. The silting up of its course from drifting sands, which was at one time apprehended, has not taken place to any serious extent; and the Canal Company experiences no difficulty in maintaining, throughout its length, the normal depth of 8 metres = 26 feet. The work of two dredgers, for eight to nine months in the year, suffice to keep under the slight silting that does take place.

*“Width.*—The width of the navigable channel averages 70 feet at the bottom; the surface width of the Canal being about 200 feet: this does not allow

of vessels passing one another, except at the sidings provided for that purpose. It has been urged, as a reproach against the Company, that it did not excavate a channel of the full width originally intended—namely, 200 feet at the surface, and 144 feet at the bottom ; but I think that it is a fortunate circumstance that the intention was not carried out. I believe that the navigation is in consequence effected in much greater security, that the risk of collision is greatly reduced, and that, in the long run, the passage through the Canal is performed in a much shorter average time than if vessels were allowed to navigate without supervision in a channel of the width originally proposed, a freedom for which those contend who find fault with the present width of the Canal.

“As this opinion is opposed to that generally held, I give my reasons for forming it. Under the present system, which resembles the ‘block system’ on a railway, no vessel is allowed to enter a section of the Canal between two sidings unless that section is clear of vessels : there is a perfect telegraphic communication throughout the length of the Canal. Each of the superintendents of the transit at Ismailia, Suez, and Port Said has a model

of the Canal in his office, with miniature vessels which enable him to fix the position of each ship as it passes through. As soon as a vessel enters the Canal, either at Suez or Port Said, its counterpart is launched on the models with name affixed : as it passes each siding, which is also a telegraph station, its position is made known to the superintendents, who fix its place on the model, and the chief transmits orders for the guidance of the pilot on board. Thus, whenever a vessel approaches a siding, it finds a signal directing its movements whether it is to remain or move on ; if to remain the orders are strict that it is to make fast to the bank in the siding, and to leave the navigable channel quite free. If these orders are obeyed, and I believe there is no instance to the contrary, it is quite impossible for two vessels to meet in the section between two sidings : they are also forbidden to pass one another when going in the same direction. The blocking of the channel, therefore, from a collision is rendered almost impossible. A collision might occur under exceptional circumstances, for a vessel passing another under regulations, as she is moored in a siding, might run into her ; but such a collision could hardly cause the sinking of either,

as one vessel would be stationary, and the other moving very slowly : no such misfortune, therefore, as the blocking of the Canal by collision is to be feared.

“ From the uncertainty of the currents, and other causes affecting a vessel's steering, it does occasionally, and not unfrequently, happen that she takes the ground as she passes through the Canal, but as the channel is narrow, when she swings across it on grounding, she is inclined to the direction of the Canal at a very small angle, and it is therefore easy to haul her off, and get her straight. Under these circumstances it can be easily understood that the only delays to which a vessel can be subject are those which arise from her finding one or more vessels in the section ahead of her, and for whose passage she must therefore wait. As the sidings are, for the greater part of the length of the Canal, not more than five or six miles apart, these delays are not long as a rule.

“ What, on the other hand, might be expected to happen if the Canal were wider and vessels allowed to navigate without restriction, obeying only the rule of the sea ? There would result the usual rivalry, and endeavour to get through as quickly as possible ;

this would be accompanied by the usual collisions. Even if the rivalry were restrained by regulations or by a sense of the consequences that might ensue, there would always remain the numerous causes of collision arising from accidents beyond control, from bad steering, from steering thrown out by the action of under-currents, from gusts of wind throwing a vessel out of her course, and a collision in such a channel would mean the closing of it, if a vessel were sunk, until she could be raised. But even should no collision occur, the effect of a vessel touching the ground would, in a wider channel, be much more serious than at present. A vessel taking the ground, say bows on, with a high wind blowing across the Canal, would immediately swing round, and her stern would ground on the opposite bank, and she would lie inclined at a very large angle to the direction of the Canal; for no one pretends that it is to be made more than 150 feet wide at bottom. She would thus block the channel until the wind should abate: for, inclined at a great angle, it would be next to impossible to haul her straight against a high wind, and until she could be hauled straight no other vessel could pass. I therefore believe that, although occasionally vessels might

pass through the Canal more quickly than at present, the average passage would be longer from delays and accidents, and there would be the ever-present danger of the channel being closed from the increased risk of collision.

“As to the alleged probable difficulty of dredging in such a narrow channel, it has not been found to exist in practice ; the dredgers can always slack their moorings and haul out of the channel before a vessel comes up to them ; such stoppages of work are turned to account for making minor repairs on board, which are reserved for such moments.

“Another argument of those who contend for greater width, is that the Canal, in its present state, cannot accommodate any very large number of vessels. I maintain that, under the present admirably arranged system, there is practically no limit to the number of vessels that can be passed ; for, if the traffic through the Canal should increase to such an extent that the present sidings could not admit at one time the fleet that would require to go through, other sidings could be made ; but practically this can never occur, for the Large Bitter Lake affords the means of shunting any number of vessels. I therefore say decidedly that it is unnecessary to

widen the Canal. The fact that her Majesty's troop-ships, vessels of 4400 tons, 400 feet long, of 52 feet beam, and drawing 22 feet of water, pass through the Canal in an average on forty-nine voyages of seventeen hours under weigh, their average time in the Canal being about forty hours, affords a convincing proof of the sufficiency of the Canal for all reasonable purposes, and as a mercantile highway. These ships, from their great height out of water, present unusual difficulties, as the large surface exposed to the action of the wind must cause them to make leeway under a cross wind more than vessels having less free board. It is to be remarked that these vessels are perfect in their capacity for steering and are handled in a most masterly manner ; but beyond these advantages, attainable by every vessel, they enjoy no special privilege in the navigation of the Canal, and have to take their turn in the sidings like others.

" The only exception to this rule is a general one in favour of postal steamers, which alone are allowed to go through during the night, and for which all other vessels have to give way.

" *Sidings*.— The sidings are, in my opinion, sufficiently numerous ; between Port Said and Ismailia

they are to be found at every five or six miles, and from Ismailia to Suez they are in about the same proportion ; but this distance is broken by the Bitter Lakes, the larger of which is some eight miles in length, and has a depth of more than 26 feet over the greater part of its extent ; vessels are therefore allowed to navigate it freely.

“ The sidings ought to be widened, and should in all instances, I think, be double ; that is, there should be the same extra width given on each side of the navigable channel, and not on one side of it only, in order that stationary vessels may always be moored to the windward bank, and moving vessels have a wider channel for passing them, thus reducing the chances of collision.

“ With the exception of the important station of Kantara, the Company intend to make these double sidings, according to the schedule of intended improvements annexed to M. de Lesseps' letter of the 31st January, 1874, to the Egyptian Government.

“ *Currents.*—The tides of the Gulf of Suez make themselves felt between Suez and the Bitter Lakes ; a difference of level is also sometimes observable in that portion of the Canal between Port Said and Lake Timsah, which is probably due to the pressure



of certain winds forcing a part of the waters of that lake into the Canal.

“The subject of currents is one which might be profitably studied by the Company’s agents, as they possess exceptional facilities for making regular and simultaneous observations, from which general rules might be deduced. My inquiries elicited that observations have been recorded, but no deduction from them has yet been made. I was not informed whether these observations have been so regular and simultaneous as would lead to the currents being thoroughly understood. The necessity for them is evidenced by the irregular manner in which the same vessels steer under apparently identical conditions of wind and tide, showing that they must be affected by under-currents, whose action is unknown.

“*Curves.*—The principal difficulty experienced by long vessels in navigating the Canal arises from the number and sharpness of the curves in its direction, for which there seems to have been no necessity, and for which the designers of the Canal must be considered to blame. The narrowness of the navigable channel increases the difficulty of passing these bends, of which one of the most difficult, but at the

same time one of the easiest to correct, is that in Lake Timsah. The motive for this most unnecessary deviation from a direct route was, I understand, to bring the Canal near to the town of Ismailia, a very insufficient reason for giving ships three bends instead of the straight course they might have had.

“Since Admiral Richards and Colonel Clarke reported on the Canal in 1870, three of the bends—namely, that of El Guisr, that at the southern extremity of the Little Bitter Lake, and one at two miles from Suez, have been rendered easier for vessels by having a greater width given to them of respectively 42, 32, and 16 feet.

“The correction of most of the bends is contemplated by the Company, but the straightening of the Canal through Lake Timsah ought not to be long delayed.

“*Entrances to the Canal.*

“*Port Said.*—The entrance to the Canal at Suez gives rise to no remark, but that at Port Said will be the greatest difficulty and danger of the future. Its present condition is most unsatisfactory, and the remedies proposed by the engineers of the Company,

as well as by the Commission of Engineers assembled at Paris last summer, do not deal with the difficulty thoroughly, or amount to anything more than palliatives of very temporary operation.

“Two kinds of deposit are threatening to silt up this entrance, with one of which the Company’s endeavours may deal successfully; with the other they do not try to grapple, but appear to think they can run away from it.

“Port Said is very correctly described by the French Engineers as a harbour *contre nature*. Where an unbroken line of coast formerly existed, piers have been thrust forward into the sea, and between them a channel has been dredged out, communicating with the Canal. Nature is daily striving to restore the continuity of the coast, which has thus been interrupted.

“From the Damietta mouth of the Nile, lying about 25 miles to the north-west, a body of water highly charged with earthy matter issues every summer during some four or five months of the inundation. This body of water turns to the south-east, and sweeps along the coast as a littoral current about three miles wide. The West Pier of Port Said, which is 7000 feet long, arrests the in-shore

half of this current, and throws down its heavier sandy particles along its length. This in-shore current, deflected from the pier at a considerable angle, flows back and meets the outer portion of the littoral current, which it thus checks, and where this check takes place—namely, to the north of the West Pier, the finer particles fall to the bottom, and a shoal is formed, which increases every summer. During the winter the beat of the prevailing north-west winds levels it down, and produces a general shallowing across the mouth of the harbour.

“The other danger springs from the choking of the channel within and parallel to the West Pier. This is being gradually filled up by the sand, which is brought along the coast by the inner band of the littoral current, as above mentioned, and deposited along the pier. At first this found its way through the openings between the rude blocks of which the pier is formed, and filled up the interstices, rendering the pier solid.

“It now accumulates on the outside of the pier, round the head of which the shoal formed by it has begun to creep.

“During the winter storms the sand along the

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beach becomes stirred up and mixed with the waves which, setting always towards the pier, again throw it down where arrested by this work, and thus increase the amount drifted into the harbour. So great is the effect produced by these two causes that, comparing Captain Nares' survey of 1870 with that made by Captain Wharton, R.N., in 1873, I find that in these three years more than 5,000,000 of cubic yards of solid matter have been thrown down between the present 18 and 30 feet lines of soundings to the west of a line drawn in continuation of the West Pier. In that time the 30° line has receded seawards 1200 yards on the prolongation of the West Pier, in other places far more than that distance. Over a space of 1200 yards west to east, and 800 yards north to south, the depth has shoaled 5 to 8 feet between the 30° line of 1870 and that of 1873.

“ In justice to that able hydrographer Captain T. Spratt, C.B., of the Royal Navy, it ought to be mentioned here that, in his well-reasoned report of the 30th January, 1858, he clearly predicted the very state of things which now exists, and in a series of remarkable arguments exposed the fallacy of the assumption on which M. de Lesseps based his as-

section that no danger to the Port Said entrance was apprehended from the Nile deposits.

“ The Company tried the effect of dredging across the entrance at the beginning of this year, but, as I should have expected, from a similar experience gained at the mouth of the Sulina Branch of the Danube in 1857, the dredged surface was filled in again by the first storm.

“ The Company has therefore decided to meet this difficulty by resorting to the system originally adopted for creating the port—namely, an extension of the West Pier : it was resolved to prolong this pier by 600 metres in this year, and the work is being actively carried out. A very large number of cement blocks have been already made, and the manufacture of others is pushed on daily with most praiseworthy energy, whilst every calm day is taken advantage of to throw into the sea, on the line of the prolongation, a considerable number of these blocks. The extension this year will cost the formidable sum of 160,000*l*.

“ I can only regret that this energy and expenditure are bestowed on what appears to me a wrong mode of meeting the difficulty. Extension is a work that will have to be renewed, and the Company are

apparently ready to incur the outlay, for in the schedule of works above alluded to as annexed to M. de Lesseps' letter of the 31st January last, I find a further extension of this mole for 1500 metres in addition to this year's work, provided for at a cost of 9,000,000 fr., or 360,000*l*. This extension of 1500 metres is called carrying the pier out to the line of 10 metres or 33 feet. Now, the 30-foot line having receded 1200 yards in three years, and having been in May, 1873, 1450 metres from the pier head at that time, I think it may safely be predicted that long before the present extension even is completed, the 10-metre line will be far more than 1500 metres ahead of it. This constant extension of this pier seems a hopeless feature in the method of dealing with the difficulty: it is only opposing Nature more and more, and furnishing her with the foundations on which she will heap ever-increasing deposits. If in five years from the completion of the pier, that is, between 1868 and 1873, it has been found that the coast line of solid dry sand has advanced 780 feet, that a formidable shoal has crept along its entire length of 2110 metres, and that a still more formidable danger to the entrance has been formed by the creation of the outside shoal

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above described, what will be the effect of simply prolonging the obstruction to the littoral current by 600 or even by 2000 metres ? Will it not be simply an aggravation and extension of the evil ? Like causes acting, as they will do, under precisely identical conditions, must produce like effects : at no very distant intervals the pier must be again and again prolonged at the ruinous cost above stated. The remedy must, in my opinion, be sought in an endeavour to arrest the cause. I do not enter here upon the inquiry as to how this is to be done, I have endeavoured simply to indicate the great danger which exists to the Canal from the rapid silting of the Mediterranean entrance, but I have a definite plan to submit to the discussion of engineers, when the right moment shall arrive for doing so.

“ The idea of the Company’s technical advisers, that by prolonging the pier they gain shelter for dredging out the silt and sand which penetrate through the pier, would be a good one if this silt and sand could not be kept from entering, but it is an expensive plan of operations, and the further the pier is prolonged the more expensive it will become, as the length to be kept open will increase with it. But this system does not even pretend to deal with



the outer shoal of which I have spoken. Nor do I find in the discussion of this subject at Paris last August any allusion to the prevention of its formation, which I hold to be necessary and possible.

"I append to this report a translation of a note addressed to me by M. le Masson on the subject of works to be executed. It will be seen that he puts the deposits at a higher figure than I have done, that is because he speaks of a larger area.

*"Condition of the Piers.*

"According to an examination made by the French engineers last summer the condition of the entirely submerged blocks, of which the piers are composed, is very satisfactory—as they are protected by a covering of shells and weed from disintegrating influences. Such, however, did not prove to be the case with the upper blocks exposed to the action of the air and spray. Upon them chemical action had taken place which had disintegrated the surfaces of some. Of 1459 blocks that were visible, 1059 were broken. About two-thirds of the broken ones and seven-eighths of the others showed traces of chemical disintegration.

"The Company are manufacturing blocks of solid

rubble masonry laid in mortar of a stronger composition than the old blocks, which it is believed will resist chemical action. These are to be used in future for the upper course of the prolongation, and for making good the original pier.

*“Facilities afforded to Trade.*

“Independently of the one great facility which the Canal affords as a shorter route to the East, there are no special facilities offered by it. One of the complaints of those resident at Port Said is that the Canal authorities do not encourage local trade by giving facilities to vessels that would embark from the banks of the Canal the produce of the interior. I think that the Company is right in preserving the character of the Canal as a great maritime communication, and in studying before all things to keep it clear for the great ocean steamers which must form its chief reliance for levying sufficient revenue. Such local commerce as is advocated would probably be a hindrance to the passage of large ships, but I shall show further on that the Company has not been obstructive in this matter.

*“Buoys, Beacons, and Bollards.*—In the way of minor facilities to ships, I may mention that the

Canal is admirably buoyed throughout its course, the navigable channel being marked by floating piles, and in the lakes by iron beacons at every 200 yards. Bollards are driven at the same distance apart wherever the Canal is bounded by solid bank, to which vessels aground can attach warps for heaving themselves off.

“*Lights*.—The sea entrances are well lighted, as are those in the Great Bitter Lake.

“*Pilots*.—Complaints have been made that the pilots of the Company are inefficient, and that they speak no language but French. I did not find these complaints borne out by facts. I made special inquiry from many persons whose information was to be trusted, and from them I learnt that although when the Canal was first opened the pilots were, as was to be expected, timid and uncertain, they now have well learnt the conditions under which the Canal is navigated, though their duties might be rendered easier, their knowledge more exact, and the safety of ships increased, if the nature of the currents had, as I above observed, been made a more important subject of study by the Company's agents. The pilots are men of all nations, much like the Danube pilots, and speak a smattering of many

languages, sufficient for the exercise of their calling. There are Englishmen among them, but they are not preferred even by the English ships. A heavy charge brought against the Company is that the pilots are not held responsible for the management of the ships on which they are embarked—the captain in each case being held responsible for the ship. The same rule is the law of the Danube, where it was introduced for the same reason as in the Suez Canal—namely, that a pilot going on board a strange vessel cannot possibly know her qualities, or be so well able to manage her skilfully in narrow waters as her own officers. The pilot can advise the captain of all local circumstances, and put him on his guard against infringing the navigation rules, but the captain must know best how to handle his ship at any critical moment; and it is best that he should remain responsible.

*“ Company's Regulations.*

“ Each captain is called upon to sign a declaration that he will conform to the rules and regulations laid down by the Canal Company. I append duplicate copies of these rules, which are printed in parallel columns of French and English: the English text

being signed also by the President Director of the Company, and therefore as valid as the French text, which is a great advantage to English ships.

“ I find the rules as a whole very fair, and practical (always excepting Article 12, which levies the toll on the gross tonnage): but I must call attention to paragraph 14 of Article 13, which I consider to be an enactment in excess of the Company's legal powers; as it lays an additional toll of 50 centimes per ton on the tonnage of ships under certain circumstances, which are explained in the accompanying extract from a letter which I addressed to Captain Willoughby, R.N., Principal Transport Officer and Agent for the Government of India in Egypt, who requested me to give him an opinion on the subject.

“ I beg here to express my acknowledgment to this officer for the readiness with which he placed at my disposal all the information he possessed on the subject of the navigation of the Suez Canal, as well as for the offer of one of the small steam-vessels under his orders, of which, however, I was unable to avail myself. Captain Willoughby having traversed the Canal on board of her Majesty's troop-ships, at least one-half of the voyages made by them, has

acquired a practical knowledge of its navigation unsurpassed by any but that of the pilots.

*“ Local Trade.*

“ Although the Company is accused of not having fostered the local trade on the Canal, and has very justly subordinated it entirely to the exigences of the maritime communication, it would be unjust to say that it has lost sight of the advantages to be derived from the encouragement of such traffic.

“ The Company has in fact made an abatement of tolls in favour of vessels carrying produce in the Canal, but his Highness the Viceroy maintains certain duties on vessels navigating Lake Menzaleh, which render this abatement nugatory, in order to bring about an equalization of the Canal dues which I now proceed to explain.

“ The maximum toll on vessels passing through the Canal from sea to sea is ten francs per ton. By their published regulations the Company levy on every vessel proceeding as far as Ismailia (the half-way point) five francs per ton for passage to that port, and an equal toll for her to return to the sea.

“ The Lake Menzaleh, which lies to the south-west of the Canal at its junction with the Mediterra-

nean, cannot at all seasons be navigated in that part of its extent which fills the angle between the Canal and the shore line, or belt of sand which separates the lake from the sea, at which point the town of Port Said has been built. During the Nile floods the lake fills, and small vessels cross it with the produce of the Delta—cotton, grain, &c., which can be shipped into vessels lying in that port, at small cost, for conveyance over the intervening Canal bank ; but when the Nile falls, the Lake falls also, and boats can no longer reach Port Said ; they are, however, able to approach the bank of the Canal at about three to four kilometres from the harbour. The Company charge sea-going or other vessels, that go thus far to meet the Lake boats,  $\frac{1}{2}$  franc for going, and the same for returning.

“ This tariff has not been published, as the Company desires to retain in its hands the power to rescind it at any moment, should the vessels refuse to conform to its rules, or should the principal maritime traffic be impeded by them.

“ The Company complains that the development of this traffic is prevented by the high duties levied by the Egyptian Government on vessels navigating Lake Manzaleh, which virtually put a stop to these

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vessels bringing the produce, of which there is abundance for export. The officers of the Company expressed their conviction that they would be able to induce the Viceroy to relax these restrictions; but from the language held to me by his Highness on the morning that I had an audience for the purpose of taking leave, I do not think he will be found at all willing to yield unless the Company complies with his demands.

“The Viceroy insists on an equalization of the duties for vessels loading at any point in the Canal, so that those proceeding to Ismailia, to receive produce conveyed thither by his railway, should not pay a higher toll than those taking produce at the Canal banks from vessels crossing the lake. His Highness’s policy in the matter is, in effect, a protective one in favour of his railways. Probably he does not desire any accommodation with the Company, for it is his interest that the whole produce of the Delta should go to Alexandria, and should thus pay fares to his railways, and dues to his port officers at that place. Every ton of produce shipped in the Canal is so much lost to undertakings in which his Highness takes a far more direct interest than in the prosperity of the Suez Canal Company.



“ In conclusion, I desire to express my thanks to M. de Lesseps for the great attention shown to me whilst I was within reach of his courtesies ; the agents of the Company also by his orders furnished me with information on all points on which I requested it, and did so with much completeness and courtesy.”

*“ Note addressed to Colonel Stokes by M. le Masson on the subject of Works to be executed at Port Said.*

“ Port Said is a port against Nature : its existence is altogether artificial.

“ The state of natural equilibrium of the coast could only be re-established by destroying every obstacle to the flow of the littoral current laden with sand and mud which runs from west to east, consequently the pier must be suppressed.

“ But if the Port Said pier be suppressed, the channel would be filled up in a few days, or a few hours, and Port Said would cease to exist.

“ The channel of Port Said can only be maintained protected by a pier.

“ This pier being an obstacle to the littoral current provokes the yearly raising of the sea bottom in the roads.

“ Taking a semicircle, of which the radius is  $4\frac{1}{2}$  kilometres and the centre the extremity of the pier, and comparing the surveys made in May, 1869, and May, 1873, by Messrs. Larousse and Wharton, we find that during these four years there have been deposited before the entrance of Port Said about 30,000,000 of cubic metres of matter brought thither, or on an average 7,500,000 of cubic metres yearly.

“ Dredgers alone cannot arrest this general raising of the sea bottom.

“ We have this year dredged a trench 600 metres long, 150 metres wide, and  $1\frac{1}{2}$  metres deep, at the entrance of the channel of the outer port, in order to improve the pass.

“ This trench, created by the work of a dredger, during three months, has completely disappeared ; it has just been filled up by a single storm.

“ Hence the necessity of prolonging each year the pier, in order to maintain the entrance of the channel under the lee of the pier in the constant depth of  $8\frac{1}{2}$  to 9 metres.”

From another letter of Colonel Stokes we see how troop-ships are taken through the Canal :—

“ As far as I understand, the duties of these

vessels are confined to acting as tenders to her Majesty's troop-ships as they pass through the Canal, but I suppose that in any difficulty they would render any services that might be required of them, such as transporting anchors, laying out hawsers, &c. When the troop-ships require towing through the Canal, the Company's tugs are always employed. The practice of towing them is better discontinued, so that the Company's tugs are less frequently used. For the latter part of the time that they were employed the *Hasty* and *Prompt* paid no transit dues, though previously for each passage of a troop-ship through the Canal they paid these dues — namely, 10 francs a ton on their own gross tonnage, both whilst accompanying the ship, and when on their voyage to or from her.

“Paragraph 14 of Article 13 of the ‘Regulations for the Navigation of the Suez Maritime Canal,’ now in force prescribes that—

“‘Ships towed or accompanied by tugs belonging to their owners will pay fifty centimes per ton as towage dues.’

“‘Such tugs whenever they shall tow or accom-

pany vessels belonging to their own proper owners will be free of any tax whatever.'

"It appears that when her Majesty's troop-ships have been towed through by the Company's tugs, this charge of 50 centimes a ton on the ship has not been imposed, but that it is now claimed under the Company's above quoted regulations.

"In my opinion the Company has acted in excess of its powers in making the above enactment."

It will be seen from this report that Colonel Stokes has misgivings as to the possibility of keeping the entrance to the Canal open. Against this view, however, must be set the cursory nature of his examination, and the deliberate opinions of Sir John Hawkshaw and the two officers who made the survey of 1870.



# THE CANAL COMPLETED.



## CHAPTER XI.

### THE FORCED LABOUR WITHDRAWN.

NOW that the chapter of "English opposition at Constantinople" was concluded, it might be thought that the more suitable course would have been to allow the adventure to pursue its way to success or failure without interference. Strange to say, this trivial system of intrigue was to recommence once more—the scene being shifted to Cairo. It was found, as we have seen, that the new Viceroy—an ambitious man, full of projects for the expansion of his kingdom—was not inclined to view complacently the spectacle of a great French Company in possession of an important portion of his estate. Neither did he relish the heavy pecuniary engagements to which his predecessor had bound him. At first, however, he accepted the responsibility with a certain loyalty, especially as there was some compensation in the cosmopolitan and civilizing character of the undertaking, which was in harmony with his other



vast schemes. Yet from him was to come the first serious check the undertaking met, and which, but for the indomitable energy of its projector, might have shipwrecked the whole.

The part taken by the French Government in all these proceedings seems a little inexplicable, for to the last it was timorous, and only decided in avoiding any patronage of the scheme. Yet those were the days when the championing of French interests was in fashion, and the initiation of every political change was, by courtesy, left to the Emperor. It may have been, as already hinted, the result of deference to that "English alliance" which he always courted, or else a part of that *bascule* policy which the Emperor practised in certain cases where he saw that the issue was likely to go against him. With the old predilection of the French for Egypt, it might have been expected that they would have eagerly supported an enterprise that would have given them a footing in the country, and thus have added to the prestige of the *grande nation*. Considering that the whole Imperial policy exhibited a policy of *coups*, it must be admitted that the Government showed vacillation, and was unable to make up its mind to a course of action.

This lack of support, however, only makes the perseverance of our projector more conspicuous. He had now lost his protector, and his situation was not encouraging. England and Turkey were opposed to him ; his own country lukewarm ; while the new Pasha was presently to show hostility. De Lesseps has lately been loud in his praises for the loyalty with which he carried out his father's engagements—but the Canal had been completed, and it was but prudent to let “bygones be bygones.” His acts, however, were not consistent with this loyalty, and had nearly destroyed the undertaking. De Lesseps imputes them altogether to the pressure of the English influence, which it will be found was exerted effectively to the prejudice of the Canal. But this coincided with the Viceroy's designs, as he considered the bargain made by his predecessor a highly improvident one—which it was—and he cast longing looks at the great tracts of territory of which the Company was lord, and at the thousands of serviceable workmen diverted from his own works. Yet already the country was giving evidence of the benefits it had received from the new enterprise.

It was in this state of affairs that the Sultan accepted an invitation from the Viceroy to visit

Egypt. It was hoped that the opportunity would be used to prejudice the works, and that the Sultan might personally influence the Egyptian ruler. The English Ambassador also found his way to Egypt, and inspected the works, and saw enough to make him confess in the frankest manner to the projector, "I must own that we can no longer affect to laugh at what you are doing, we ought rather to envy you. All that I fear is the influence France will acquire by this great scheme."\* Contemporaneously with this visit the English Fleet appeared off the coast, and it was believed by the French that this was done with a view to intimidate the Viceroy. Mr. Hawkshaw about this time, at the request of the Viceroy, made a professional examination of what had been done; and declared that the whole, including jetties and other works, was feasible, and that as an engineering work it could be carried out with complete success. But these fair prospects and the compliments of the Ambassador were delusive, and the scheme was never to be so near shipwreck as it was during the next succeeding months. The most immi-

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"Entretiens," 1864, p. 70.

nent dangers had been surmounted, the principle of the concession itself had been opposed, the possibility of constructing the Canal contested over and over again, political perils had been invoked—all had failed of effect. The idea now was suggested of depriving the projector of the actual means of carrying his scheme into execution. This was ingeniously contrived by starting philanthropic objections to the employment of the forced labour. Here opened a new and disheartening chapter of opposition, which, it must be said, can be traced distinctly to English influence. This pressure took the shape of Ministerial declarations in the House of Commons, with despatches containing remonstrances, which we shall touch on presently. It is thus seen what a current of persistent hostility was maintained during three years, and which took the most Protean forms. So early as 1861, before the death of the late Pasha, this very mode of interference had been discovered and applied.

“The Viceroy,” says our projector, “had promised me 20,000 men, but in 1861 he was so tormented, there was so much animosity shown in diplomacy, that he begged me, with a certain justice, not to keep him to his engagements. I myself

advised him to observe great prudence. It was then that I undertook a journey to my friends the Philistines, a population of solid and vigorous workmen."\* These he enlisted in the service.

In the following year questions were begun to be put in the House, in answer to which Mr. Layard, with that *brusquerie* which distinguished him where his prejudices were concerned, declared that the use of this forced labour had been denied, but that he believed that thousands were dragged from their homes to work at the Canal. He trusted to the humanity of the Pasha, &c. Considering that all the interior canals, the works on the Nile, and the railways, had been made on this system of forced labour, with perfect indifference on the part of Foreign Powers, it certainly seemed a little singular that sympathy should have been aroused only in the instance of the Maritime Canal.

At this time England was suffering from the cotton famine, as it was called, and an allusion in Mr. Layard's speech, intentional or otherwise, revealed the motive that dictated this philanthropic interest in the oppressed Egyptian fellah. French-

men, at least, could not but associate the idea with some selfish motive. "Such a course of proceeding," said the Minister, "must be associated with great misery, and must seriously interfere with the most advantageous occupation for labour—for instance, *the production of cotton.*"

That enormous numbers of natives were employed on the works there could be no question. When the Canal was commenced a moderate instalment of some 8000 men were all that was needed, but as the operations extended the number expanded to 20,000, and when the Fresh-water Canal had been brought to Lake Timsah, fully double that number was needed. At one time there was 80,000 men. All this labour was supplied on the Fresh-water Canal in pursuance of a formal contract made with the Viceroy. Much misapprehension arose from profuse repetition of the term "forced labour," and people's minds strayed back to the legends of the construction of the Pyramids and other huge works, when wretched natives were employed like beasts of burden, with a reckless destruction of human life. A glance at the contract between the Viceroy and M. de Lesseps will show that the Canal labour was not subject to any oppressive

conditions. By the second article of this agreement it had been stipulated that the labourers should be paid at a rate higher than what was usually paid in Egypt. By the third the amount of work to be exacted from each was defined. By the fifth punishment was to take the shape of a deduction from wages. By the sixth the Company bound itself to maintain hospitals and provide gratuitous medical treatment. By the seventh the Company was to pay the cost of transporting the workmen from their homes ; to deduct only half the wages in case of sickness. Any soldiers who were employed were to receive the same pay as civilians. These seemed liberal conditions. It was a fair retort to make that when the railway from Alexandria was being constructed, none of this solicitude for the oppressed fellahs was manifested. The English Government was anxious that the new and all-important route to India should be opened with all speed ; and, as M. de Lesseps states, the consul was unwearied in pressing the Viceroy to employ additional labour. " He would listen to no objections. In vain it was represented to him that depôts of water and provisions should be first formed in the desert to support such a multitude. He would hear of no

delay. The results were great privation and suffering, and wholesale desertion."\*

These statements may have been exaggerations, but it is certain that no remonstrance was at that time offered against the employment of forced labour for an undertaking which was thought so advantageous.

Regardless, however, of the inconsistency, the English Government in the month of May proceeded to address formal remonstrances to the French Cabinet on this score, and a series of accusations that seem rather of a petty kind were put forward.

It was urged that in July, 1863, the system of paying the men directly was abandoned, and that portions of the works were allotted to the sheiks, who saw that the task was accomplished, and then received a bulk sum for distribution. Further, that the men were brought to the works in great bands, and that if they attempted to leave before the end of the month they were brought back by force. This was met by a distinct denial, the men being paid personally, though it was admitted that they were under the control of sheiks, who main-

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"Entretiens," 1864, p. 81.



tained them, and who were themselves highly paid. As it was the custom to pay a portion of the wages in advance, the men could not be allowed to desert until they repaid by their labour what had been thus advanced.

It was then complained that they were brought from enormous distances, that the payments were made to the credit of the Viceroy, who, as it were, contracted for the labour, and supplied biscuit as food, and that the men at the end of this term merely received a certificate from the Company, and no cash.

This again was denied, and appeal was made to numbers of travellers, English and others, who had often witnessed the curious spectacle of such a vast number of workmen receiving their pay. As for bringing the workmen from a distance, the not unfair retort was that this was what the English themselves allowed in the case of the Chinese coolies imported into Australia, and who, it was notorious, were brought over by contractors, who had a lien upon their earnings. As to the charge of contracting with the Viceroy, a reference was invited to the regular balance sheets of the Company for the last three years, in which it would be found that there was

no payment of the kind to the Viceroy. Again, as regards the provisioning of the workmen, it was entirely untrue that the Government provided any biscuits or other food. This was entirely supplied by the Company, who could again appeal to its published reports for a detailed account of the enormous stores accumulated along the works.\* The whole seemed a fair justification. At the same time it was idle to suppose that there were no abuses or oppression under such a system. But it is scarcely fair to look for highly civilized usages in such a country. The Company, indeed, seems to have provided for the support of the workmen in a large and sufficient manner. They had a staff of 400 persons whose duties were confined to the supply of food. Later on, towards the year 1865, the works had attracted a concourse of merchant caterers, who were able to furnish everything on the spot, in the regular course of trade.

Two years before the Canal opened the system of imported labour was in full vigour. A vast number of "navvies" were brought from France, chiefly from

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\* Amounting to about a month's supply, at the rate of 20,000 kilogrammes daily.

Lyons, who were treated in a very liberal spirit. They received an outfit of 60 francs, 18 francs for their support on the voyage, and 30 for their support in passing through Egypt. Their contract was for three years; they received nine francs a day, but their earnings for the month generally came up to 10/. A canteen was provided at Suez, as well as lodging-houses, and for three francs and a half all meals were found. The Company, however, protected itself against insubordination, forfeiture of the engagement or desertion, by deducting a franc and a half a day, until the sum it had advanced was reached, which was detained on deposit and restored at the end of the engagement. In this favourable treatment the natives participated, and the rate of native wages rose in proportion. This was, in fact, another of the many incidental advantages of the enterprise.

The Pasha must certainly have been dissatisfied at finding himself hampered with the arrangements made by his predecessor and the heavy charges entailed.

It will be seen from the following extract from the Report of one of the meetings in 1864, how involved were his relations and those of the Company, and what claims they had on him, especially in

regard to the Fresh-water Canal, which the late Viceroy had covenanted to make :—

“ *L'actionnaire.*—Le domaine du Ouady était affermé pour une somme de 150,000 francs pour l'année qui vient de s'écouler ; le ~~revenu~~ n'a été en définitive que de 118,000 francs. Cette diminution a été faite aux fermiers par l'administration, vu le manque d'eau pour l'irrigation. Cette disette d'eau n'est elle pas le résultat du non-achèvement du canal d'eau douce allant du Caire au Ouady, concédé au Pacha d'Égypte pour être terminé le 1<sup>er</sup> mars 1865 ? N'y aurait-il pas droit à une indemnité à réclamer à S. A. le Pacha pour la perte subie par la Compagnie, et quand le canal sera-t-il fini ?

“ *M. de Lesseps.*—Il y a une erreur dans votre question ; la différence entre le revenu de 1864 et les nouveaux baux faits avec les fermiers est plus considérable que celle que vous venez de signaler. Les comptes présentés ont donné en 1864 un résultat liquide de 118,000 francs pour le Ouady et un revenu brut de 150,000 francs ; l'écart ne provient que de l'impôt, par conséquent, il n'y a rien à dire sur ce point. Mais pour vous faire apprécier les avantages de l'acquisition de cette propriété, je vous rappellerai qu'à l'expiration des trois années de la première pé-

riode, M. Guichard, notre administrateur, a renouvelé les baux avec les mêmes fermiers non plus au prix de 150,000 francs, mais de 500,000. Le Nil ayant baissé d'une façon extraordinaire et le vice-roi devant nous fournir par les canaux intérieurs une quantité d'eau déterminée pour l'alimentation d'eau douce jusqu'à Suez, il en est résulté que les cultivateurs ont été privés de l'eau sur laquelle ils comptaient pour irriguer leurs terres. Cette mesure générale a imposé à tous les agriculteurs des territoires entre le Caire et Zagazig une charge qui a frappé la Compagnie ainsi que tous les autres propriétaires. Nous avons profité comme Compagnie de cette situation qui nous permettait d'exécuter nos travaux, nous en avons souffert comme propriétaires. Nous ne pouvons pas comme propriétaires du Ouady invoquer notre situation de Compagnie ayant droit à telle quantité d'eau qui devait nous être fournie par le vice-roi ; et comme agriculteurs, ayant acheté une propriété, nous devons être soumis à toutes les charges du pays. Dans cette situation, il était juste de tenir compte à nos fermiers du cas de force majeure qui rendait improductives une partie des terres que nous leur avions affermées et de ne pas exiger d'eux l'augmentation des fermages. Grâce à cette mesure

de toute équité, la population, qui sous notre administration s'était élevée de 4 à 11,000 hommes, s'est maintenue ; une bonne partie des terres seront cultivées sinon en coton, du moins en maïs et autres céréales, etc. Nous n'en retirerons pas le prix des nouveaux baux, mais nous en retirerons au moins celui des années précédentes.

“ Lorsque nous avons fait ces nouveaux baux, nous comptions, je le répète, sur un arrosage plus prochain de la partie du canal à la charge du vice-roi ; le choléra et d'autres événements en ont retardé l'exécution ; en attendant, nous devons, comme propriétaires, nous soumettre aux lois du pays, et ne pas mériter le reproche d'étrangers profitant de leur situation d'étrangers pour se soustraire à ces lois. (Très-bien ! très-bien !)”

The charges of oppression in time had their effect as an excuse, at least for those who did not favour the scheme, to interfere. As we have seen, the new Viceroy was never heartily disposed towards the great project of his father. His own grand schemes for the development of the resources of his country needed a vast employment of labour. He was planning the cultivation of cotton and other products on a vast scale. He had determined on opening

great sugar refineries ; and he was not sorry to have an excuse for withdrawing such an army of useful hands. Accordingly in the full tide of its progress the unsuspecting Company received notice that the forced labour was to be withdrawn. The objection came from the Sultan, but there can be little doubt, from the questions put in Parliament in the interest of the Fellah, that it was prompted by this country. Captain Clerk states that the Sultan particularly objected to the clause which secured the sick Fellah only half his pay. This anxiety for the subject castes was certainly not genuine. He also firmly, and more reasonably, refused to sanction foreigners holding grants of land and selling or letting them. The result of these checks was that the works languished, and were at last almost totally abandoned for a period of two years. Now the enemies might fairly triumph, and with another spirit to direct it, it might have become one of those hopeless abandoned " follies " which are found in every country, and of which the stranger learns the history with wonder.

# APPENDIX.

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## OFFICIAL DOCUMENTS.

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### THE CONCESSION.

*First Concession by his Highness Mohammed Said,  
Viceroy of Egypt.*

OUR friend M. Ferdinand de Lesseps having called our attention to the advantages which would result to Egypt from the junction of the Mediterranean Sea with the Red Sea by a passage navigable by large vessels, and having shown us the possibility of constituting a Company formed of capitalists of all nations for this purpose, we have accepted the combinations he has submitted to us, and have given him by these Presents the exclusive power of constituting and directing an universal Company for cutting through the isthmus of Suez and establishing a Canal between the two Seas, with power to undertake or cause to be undertaken, all works and constructions, the Company being charged with indemnifying private individuals in case of expropriation for the public use ; the whole within the limits, conditions, and charges settled in the Articles which follow :—

Art. 1. M. Ferdinand de Lesseps will form a Company, the direction of which we confide to him, under the name of the “ Universal Company of the Maritime Canal of Suez,”



for piercing the isthmus of Suez, and opening up a passage navigable by large vessels, the foundation or appropriation of two sufficient entrances, one upon the Mediterranean, the other upon the Red Sea, and the establishment of one or two ports.

Art. 2. The director of the Company is always to be nominated by the Egyptian Government, and chosen, as far as possible, from among the shareholders most interested in the undertaking.

Art. 3. The length of the grant is for ninety-nine years from the day of the opening of the Canal between the two seas.

Art. 4. The works will be carried on at the exclusive expense of the Company, to which all necessary land, not belonging to private individuals, will be granted gratuitously. The fortifications which the Government may see fit to erect are not to be at the charge of the Company.

Art. 5. The Egyptian Government will receive annually from the Company 15 per cent. on the net profits arising from the Company's balance, without prejudice to the interest and dividends accruing from the shares which the said Government reserves to itself at the time of their issue, and without any guarantee on its part for the carrying on of works, or in the Company's operations. The remainder of the net profits will be allotted as follows :—

75 per cent. to the benefit of the Company ;

10 per cent. to the benefit of members founding the Company.

Art. 6. The tariff of the right of way through the Suez Canal arranged by the Company and the Viceroy of Egypt, and levied by the Company's agents, always is to be the same for all nations, no one nation being able to stipulate for any advantage to its own profit in particular.

Art. 7. In the case of the Company judging it necessary

to connect, by a navigable way, the Nile with the direct cutting of the isthmus, or in the case of the Maritime Canal taking an indirect course, which is supplied by the waters of the Nile, the Egyptian Government is to give up to the Company those portions of the public property now uncultivated which would be watered and cultivated at the expense or by the care of the said Company.

The Company will enjoy possession, without taxes, of the said property for the term of ten years from the day of the opening of the Canal; during the eighty nine years which will still remain before the expiration of the grant it shall pay tithes (dimes) to the Egyptian Government; after which time it is only to be allowed to continue in possession of the lands above-mentioned so long as it pays to the said Government the regular tax equal to what is laid on land of the same nature.

Art. 8. To avoid all difficulty on the subject of land given up to the Company, a plan drawn out by M. Linant-Bey, the engineer appointed by us to the Company, will indicate the lands granted, whether for the passage and the establishments of the Maritime Canal and of the Canal of supplies derived from the Nile, or for the purposes of cultivation, in conformity with the stipulations of Article 7.

It is, moreover, understood that henceforth all speculation upon the portions of public lands to be granted is forbidden, and that lands formerly belonging to private individuals, which the proprietors may wish, later on, to be watered by the Canal of supplies made at the Company's expense, shall pay a fine of. . . . . on each cultivated feddan (or a sum fixed amicably by the Egyptian Government and the Company).

Art. 9. Power is finally granted to the Company to work all mines and quarries belonging to the public lands without paying for materials necessary for the works of the Canal

and the constructions belonging to it ; also to enjoy free importation of all machines and materials from abroad for the working of the Concession.

Art. 10. At the expiration of the Concession the Egyptian Government will take the place of the Company, and enjoy its rights without reserve, and enter into full possession of the Canal of the two Seas, and all the establishments thereunto belonging. An amicable arrangement or arbitration will determine the indemnity allowed to the Company for the surrender of materials and moveable articles.

Art. 11. The Statutes of the Society must ultimately be submitted to us by the Director of the Company for our approbation. Modifications which may be introduced hereafter must receive our sanction beforehand. The said Statutes will mention the names of founders ; we reserve to ourselves the right to approve of the list. This list will comprehend all persons who, by their labours, their learning, exertions, or capital, have contributed to the execution of the great undertaking of the Suez Canal.

Art. 12. Finally, we promise our good and loyal concurrence, and that of all the functionaries of Egypt, in order to facilitate the execution and administration of these present powers.

Cairo, November 30th, 1854.\*

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\* This first grant has been replaced by a second, bearing date 5th January, 1856, the twenty-third and last article of which runs thus :—  
“ Art. 23.—All the provisions of our ordinance of the 30th November, 1854, are revoked, with others which will be found to be in opposition to the clauses and conditions of the present specification, which will only be law for the grant to which it applies.”

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TO MY DEVOTED FRIEND, OF HIGH BIRTH AND  
RANK, M. FERDINAND DE LESSEPS,—

The grant made to the Universal Company of the Suez Canal having to be ratified by H. I. M. the Sultan, I forward you this copy that you may keep it in your possession. As to the works relating to the excavation of the Suez Canal, they will not be begun until after the authorization of the Sublime Porte.

The 3rd Ramadan, 1271.



(Seal of his Highness the Viceroy.)

True translation from the Turkish.

*The Secretary of the commands of his Highness the Viceroy.*

(Signed) KOENIG BEY.

Alexandria, May 19th, 1855.

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*Second Act of Concession and Specification for the Construction and Management of the Great Maritime Suez Canal and Supplementary Works.*

(With the Modifications up to July, 1875.)

WE, Mohammed Said-Pacha, Viceroy of Egypt, in consideration of our grant of Nov. 30, 1854, by which we have given to our friend M. Ferdinand de Lesseps exclusive power for the purpose of constituting and directing an universal Company for cutting through the Isthmus of Suez, opening up a passage fit for large vessels, the foundation or appropriation of two sufficient entrances, one upon the Mediterranean, the other upon the Red Sea, and the establishing of one or two ports.

M. Ferdinand de Lesseps having represented to us that, in order to constitute the Company above indicated according to the forms and conditions generally adopted for societies of that nature, it is useful to stipulate beforehand, in a more detailed and complete deed, on one part, the charges, obligations, and rents for which the society will be liable ; on the other the grants, immunities, and advantages to which it will be entitled, as well\* as the faculties accorded for the administration : We have decreed as follows, the conditions of the grant which is the object of these presents.

#### § I. OBLIGATIONS.

Art. 1.\* The Society founded by our friend M. Ferdinand de Lesseps, in virtue of our grant of the 30th of November, 1854, must execute at its own expense, risk, and peril, all works and constructions necessary for the establishment.

1st. A Canal for the navigation of large vessels, between Suez on the Red Sea, and the gulf of Pelusium in the Mediterranean.

2nd. A Canal of irrigation, for the navigation of the Nile,

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\* By a convention which took place on the 18th March, 1863, between the Viceroy and the Company, approved by the general meeting of shareholders of the 15th July of the same year, the Company re-conveyed to the Egyptian Government the section of the Fresh-water Canal comprised in the 2nd par. of the article.

By two other conventions agreed upon January 30th and February 22nd, 1866, and approved by the general meeting of 1st August following, the Company also re-conveyed to the Egyptian Government, by abrogation of the 3rd par. of the article, one of the two branches of the Fresh-water Canal, which flows in the direction of Suez. The other branch, flowing in the direction of Pelusium or Port Said, remained in the hands of the Company.

The conditions of these re-conveyances were regulated by the same convention.

joining the river to the Maritime Canal above-mentioned.

3rd. Two branches for irrigation and alimentation derived from the preceding Canal and bearing their waters in the two directions of Suez and of Pelusium.

The works to be conducted in such a manner as to be finished in six years' time, except in the case of unavoidable hindrances and delays.

Art. 2. The Company are to have all facilities for executing the works with which it is charged, by itself and with administrative powers (*in regie*), or to cause them to be executed by contractors by means of adjudication or otherwise. In all cases four-fifths at least of the workmen employed in these works are to be Egyptians.\*

Art. 3. The Canal for the navigation of large vessels shall be of the depth and width fixed by the programme of the scientific International Commission.

In conformity with this programme it shall start from the port itself of Suez ; use the basin, so called, of the Bitter Lakes and of Lake Timsah ; and will fall into the Mediterranean, at a point of the gulf of Pelusium to be determined by the final plans drawn up by the Company's engineers.

Art. 4. The Canal of irrigation destined for the navigation of the rivers as laid down with conditions of the said programme, is to take its rise near the city of Cairo, follow the valley (Ouady) Toumilat (old land of Gessen or Goshen) and fall into the great Maritime Canal at Lake Timsah.

Art 5. The arms of the said Canal are to branch off from the main body of water, above the outlet into Lake

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\* The part of this article relating to the employment of Egyptian workmen (fellahs) has been abrogated by the convention of February 22nd, 1866, by means of an indemnity.

Timsah ; at which point they will be directed on one side towards Suez, on the other towards Pelusæ, parallel to the great Maritime Canal.

Art. 6. Lake Timsah will be converted into an inland port able to receive vessels of the largest tonnage.

The Company will be bound, moreover, if necessary, 1st to construct an harbour at the entrance of the Maritime Canal to the gulf of Pelusium. 2nd. To improve the port and roadstead of Suez, so as also to afford shelter to vessels.

Art. 7. The Maritime Canal and ports belonging to it, as well as the Canal of junction with the Nile and that of derivation, will always be kept in good order by the Company and at its own expense.\*

Art. 8. The owners of property on the bank of the river wishing their land to be irrigated by artificial supplies from the Canals constructed by the Company, may obtain grants from it for this purpose by means of an indemnity or duty, the amount of which shall be fixed by the conditions of Article 17, hereinafter mentioned.†

Art. 9. We reserve the right to appoint on the Board of Management a special commissioner, to be paid by the Company, and who will represent the rights and interests of the Egyptian Government in the execution of the provisions of this present deed.

If the Society's Board of Management be established

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\* The part of this article relating to the Company's maintenance of the Canal of junction, and the Canal of derivation has been annulled by the conventions of re-conveyance, except in so far as concerns the Pelusian branch of the Canal of derivation retained by the Company.

† The rights of indemnity or duty stipulated by this article in favour of the Company for the artificial supplies it might grant from the fresh-water Canals, have been abolished by the conventions of reconveyance in so far as regards the parts re-conveyed.

elsewhere than in Egypt, the Company will be bound to be represented at Alexandria by a superior agent provided with all powers necessary to secure the furtherance of the work and the relations of the Company with our Government.

## § II. CONCESSIONS.

Art. 10.\* In return for the construction of the Canals and the additional works mentioned in the foregoing articles, the Egyptian Government allows the Company, without tax or duty, to enjoy the use of all land not belonging to private individuals which they may require.

Also the use of all land as yet uncultivated not belonging to private individuals, which will be watered and cultivated at the Company's expense and trouble, with this difference: 1st. That the portions of land included in this last category shall be exempt from taxes for ten years only, dating from their connexion with the undertaking. 2nd. That after that term, and until the expiration of the grant, they shall be liable to the obligations and taxes to which the land of the other Egyptian provinces is liable under the same circumstances. 3rd. That the Company can, afterwards, by its own acts or by its assigns, keep possession of this land and the artificial supply of water necessary for its fertilization on undertaking to pay to the Egyptian Government the taxes imposed upon the land under the same conditions.

Art. 11. To determine the extent and limits of the

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\* By the convention of the 22nd February, 1866, already referred to, the Company renounced the advantages of Articles 10, 11, and 12, in consideration of a pecuniary compensation with the reservations necessary for the uses of the Maritime Canal, for its establishment, its working, and preservation, in conformity with the plans and designs annexed to the grant.



land granted to the Company, under the conditions of the Sections 1 and 2 of Article X. above quoted, reference is to be made to the plans hereto annexed ; it being understood that the lands granted for the construction of the Canals and dependencies free of tax or duty in conformity with Section 1 are shown coloured black, and the lands granted for cultivation by payment of certain dues in conformity with Section 2, are therein shown coloured blue

All deeds to be considered null and void made subsequent to our firman of 30th November, 1854, which will either vest rights of indemnity against the Company in private individuals which have not yet existed with respect to those lands, or rights of indemnity more extensive than they have yet enjoyed.

Art. 12. The Egyptian Government will make over, if occasion arise, to the Company, any private property the possession of which may be necessary to the execution of the work and the administration of the grants, provided the Company pay a just indemnity to the owners.

Indemnity for temporary occupation, or of definitive expropriation is to be regulated amicably as far as possible ; in case of disagreement, it will be fixed by a tribunal of arbitration proceeding summarily and composed : 1st, of an arbitrator chosen by the Company ; 2nd, of an arbitrator chosen by the parties interested, of a 3rd arbitrator nominated by us.

The decisions of the tribunal of arbitration to be immediately executory and without appeal.

Art. 13. The Egyptian Government invests the privileged Company, for the whole term of the grant, with power to work any mines and quarries that are public property free of duty, tax, or indemnity, and extract all materials necessary for the purposes of constructing and

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maintaining the works and establishments belonging to the undertaking.

It frees the Company, moreover, from all Custom-house dues, of export or import, on the importation into Egypt of all merchandize and materials whatsoever from abroad for the needs of the Company's different works in course of construction or management.\*

Art. 14. We declare solemnly, for ourselves and our successors, subject to the ratification of H.I.M. the Sultan, the Great Maritime Canal of Suez to Pelusium and the ports belonging to it, open at all times, as neutral passages, to every merchant vessel crossing from one sea to the other, without any distinction, exclusion, or preference of persons or nationalities, in consideration of the payment of the dues, and the performance of regulations established by the universal privileged Company for the use of the said Canal and its dependencies.†

Art. 15. In consequence of the principle laid down in the foregoing article, the universal privileged Company cannot, in any case, give to any vessel, Company, or private individual, any advantage or favour not given to all other vessels, Companies, or individuals, on the same conditions.

Art. 16. The duration of the Company is fixed at 99 years, counting from the completion of the works and the opening of the Maritime Canal to large vessels.

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\* By a Convention between the Khedive and the Company passed April 23rd, 1869, approved by the general meeting of the 2nd August following, the Company gave up the exemption from Custom-house dues expressed in the second paragraph of Article 13, in consideration of certain pecuniary compensation.

† The Convention of February 22nd, 1866, explained in its article that no violation was intended of the freedom from Custom-house dues enjoyed by the general transit of the Maritime Canal by vessels of all nations without distinction, exclusion, or preference.

At the expiration of this period, the Egyptian Government will resume possession of the Canal constructed by the Company, on condition, in this case, that the Government take over the materials and provisions in use for the Maritime Service of the undertaking, and pay the Company the value fixed, either by amicable arrangement or official estimate.

Nevertheless, should the Company retain the concession by successive periods of 99 years, the previous deduction for the benefit of the Egyptian Government stipulated by Article 18 hereafter shall be increased for the second period to 20 per cent., for the third period to 25 per cent., and so on, at an increase of 5 per cent. for each period, such deductions not to exceed 35 per cent. of the net profits of the undertaking.

Art. 17. In order to indemnify the Company for the expenses of construction, maintenance, and management placed to its account by these presents, we authorize it, henceforth, and for the term of its possession, as may be determined by paragraphs 1st and 3rd of foregoing Article, to establish and collect for the right of passing through the Canals\* and the ports belonging, navigation, all pilotage, towage, or anchorage dues, according to tariffs to be modified by the Company at all times; but under this strict condition :—

1st. The dues to be levied without exception or favour upon all vessels under like conditions;

2nd. The tariff to be published three months before

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\* By the terms of the Convention of February 22nd, 1866, and in consequence of the re-conveyance of the Fresh-water Canal, the Company has ceased to have a right to taxes for navigation, pilotage, anchorage, or towage upon the said Fresh-water Canal, as well as to the taxes for artificial supplies of water.

being put into force, in all the capitals and the principal ports of commerce of the countries concerned ;

3rd. For the special navigation dues the maximum of ten francs a ton for vessels, and ten francs a head for passengers not to be exceeded.

The Company may, also, for all artificial supplies of water granted on demand by private individuals, in virtue of Article 8 above-mentioned collect, according to a tariff to be fixed by itself, a duty proportionate to the quantity of water used and the extent of ground watered.

Art. 18. At the same time, since grants of land and other advantages have been bestowed upon the Company by the foregoing Articles, we reserve, for the benefit of the Egyptian Government, a deduction of 15 per cent. upon the net profits of each year settled and allotted by the general meeting of shareholders.

Art. 19. The list of Founder-Members who have assisted by their labours, exertions, and their capital the realization of the undertaking before the foundation of the Society will be determined by us.

After the deduction for the Egyptian Government stipulated in Article 18 above-mentioned, 10 per cent. of the net annual products of the undertaking is to be allotted to the Founder-Members, their heirs or assigns.

Art. 20. Independently of the time necessary for the execution of the works, our friend and representative, M. Ferdinand de Lesseps will preside over and direct the Society as first founder, for ten years, dating from the time when the period of the enjoyment of the grant of 99 years begins, by the terms of Article 16 above-mentioned.

Art. 21. The statutes of the Society thus created under the denomination of Universal Company of the Maritime Canal of Suez are hereby approved ; this present approbation being valid as an authorization of constitution, in

the usual form of "*Sociétés Anonymes*," dating from the day on which the capital of the Company shall have been entirely made up.

Art. 22. As a testimony of the interest we attach to the success of the enterprise, we promise the Company the hearty co-operation of the Egyptian Government, and by these presents expressly invite all functionaries and agents of the departments of our administration, to afford it their aid and protection under all circumstances.

Our engineers, Linant-Bey and Mougel-Bey, whom we place at the Company's disposal for the direction and management of the works required by it, will have the supervision of workmen and be charged with the execution of regulations concerning the setting up of the works.

Art. 23. All the provisions of our ordinance of the thirtieth November, one thousand eight hundred and fifty-four are revoked, with others which will be found to be in opposition to the clauses and conditions of the present specification which will only be law for the grant for which it applies.

Executed at Alexandria, January 5th, 1856.

TO MY DEVOTED FRIEND, OF HIGH BIRTH AND RANK,  
M. FERDINAND DE LÉSSEPS.

The grant bestowed upon the Universal Company of the Maritime Canal of Suez having to be ratified by H.I.M. the Sultan, I forward you this authentic copy that you may constitute the said financial Company.

As to the works relating to the boring of the Isthmus, the Company can execute them itself so soon as the

authorization of the Sublime Porte has been accorded to me.

Alexandria, the 26 rebi-ul-akher 1272 (January 5th, 1856).



(Seal of his Highness the Viceroy.)

A true translation from the original Turkish, deposited in the State Archives.

*The Secretary of the commands of  
his Highness the Viceroy,*

(Signed) KOENIG-BEY.

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*Decree as to the Native Workmen.*

(1856.)

WE, Mohammed-Said Pasha, Viceroy of Egypt, wishing to secure the execution of the works of the Maritime Canal of Suez, to provide for the good treatment of the Egyptian workmen therein employed, and at the same time to watch over the interests of the cultivators, proprietors, and contractors, have laid down, in concert with M. Ferdinand de Lesseps, as President and founder of the Universal Company of the said Canal, the provisions following :—

Art. 1. The workmen employed in the Company's works shall be supplied by the Egyptian Government at the demand of the chief engineers, and as required.

Art. 2. The wages allowed to workmen shall be fixed, according to the average of wages paid for work by private individuals, at the sum of from two piastres and a half to three piastres daily, exclusive of rations to be given in kind by the Company at the value of one piastre.

Labourers under twelve years of age will only receive one piastre, but full rations.

Rations in kind shall be distributed daily, or every two or three days in advance, and in the case of workmen applying for their rations in money, it shall be given them if there is a certainty that they are in a condition to provide themselves with food.

Payment in money shall be made weekly. For the first month, however, the Company will only pay half wages, until a reserve fund of fifteen days' pay has been accumulated, after which the whole of their wages will be made over to the workmen.

The business of supplying drinkable water in abundance for all the requirements of the workmen is at the Company's charges.

Art. 3. The task imposed upon the workmen shall not exceed that fixed in the building of bridges and roads in Egypt, which has been adopted in the large works of making Canals in the last years.

The number of workmen employed shall be settled by taking into consideration the times of agricultural labour.

Art. 4. Order in the workyards shall be kept by the officers and agents of the Government, under the orders and according to the instructions of the chief engineers, in conformity with a special regulation which will receive our approbation.

Art. 5. Workmen not having performed their task shall be liable to a diminution of wages, which shall not be less than a third, and proportioned to the deficit in the work commanded,

Deserters will lose, by the fact alone, the reserve fund of fifteen days' pay. The sum will be put into the box of the hospital, of which mention will be made in the article following.

Those who make a disturbance in the workyards will also be deprived of the reserve fund of fifteen days' pay; they will, moreover, be subject to a fine to be put into the box of the hospital.

Art. 6. The Company shall be bound to shelter the workmen, either under tents, or in suitable sheds or houses. It shall keep up a hospital and ambulances, with the necessary staff and apparatus for the treatment of patients at its own expense.

Art. 7. The travelling expenses of workmen and their families, from the place of departure until their arrival in the workyards, shall be at the Company's charges.

Every workman on the sick list shall receive in the hospital ambulances, besides the care his condition may require, one piastre and a half wages all the time he is unable to work.

Art. 8. Skilled workmen, such as masons, carpenters, stone-cutters, blacksmiths, &c. &c. shall receive the same wages as the Government has been in the habit of allowing for Government works, besides rations in food, or the value.

Art. 9. When soldiers belonging to the regular army are employed on the works, the Company will distribute to each one, as extra pay, ordinary wages, or maintenance, a sum equal to the pay of the civilians.

Art. 10. All baskets necessary for the transport of earth and materials, as well as the powder for working the quarries, will be supplied to the Company by the Government at cost price, provided the demand for them has been made at least three months in advance.

Art. 11. Our engineers, Linant-Bey and Mougel-Bey, whom we place at the Company's disposal for the direction and management of the works, will have the higher supervision of the workmen, and will act in concert with the



manager delegated by the Company to smooth away any difficulties which might arise in the execution of the present decree.

Executed at Alexandria, July 20th, 1856.

(L. S.)



(Seal of his Highness the Viceroy.)

(Translation from the Turkish.)

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*Statutes of the Company.\**

Abstract furnished to the House of Commons by Mr. F. Reilly.

CHAPTER I.—*Formation and Object of the Society—  
Name—Seat—Duration.*

Art. 1. There is hereby formed among the subscribers and proprietors of the shares hereinafter created a Society (*société anonyme*) by the name of *Universal Company of the Maritime Canal of Suez*.

Art. 2. Objects of the Society stated.

The whole, according to the clauses and conditions of the concession resulting from the Ordinances of the Viceroy of 30 November, 1854, and 5 January, 1856.

Art. 3. The Society to have its seat at Alexandria, and its administrative domicile at Paris.

Art. 4. The Society commences from the day of signature of the instrument (*l'acte social*) declaring that the whole

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\* Approved by Article 21 of the second Concession, above. For the original French text see either Hertselet's "State Papers," vol. iv. p. 981, or "Parl. Papers," Egypt, No. 6 (1876).

of the shares had been subscribed for. Its duration is the same as that of the concession.

Art. 5. Preliminary expenses.

## CHAPTER II.—*Capital—Shares—Payments.*

Art. 6. The capital of the Society is fixed at two hundred million francs, represented by four hundred thousand shares of five hundred francs each.

Art. 7. The certificates of shares and debentures, whereof the Council of Administration is to determine the form, to be in Turkish, German, English, French, and Italian.

Art. 8. The amount of each share to be payable in specie at places named.

Art. 9. Instalments to be paid according to calls made by the Council.

Arts. 10, 11, 12, 13. Provisional nominal certificates (scrip).

Arts. 14, 15. Five per cent. per annum chargeable on calls in arrear. Sale by Society of shares on which calls in arrear.

Art. 16. Shares (*les actions définitives*) are to bearer. Transfer of them is effected by mere delivery of the share certificate.

Numbering, signing, and sealing of shares.

Art. 17. The Council may authorize the deposit and keeping at the Society's office of share certificates to bearer. In that case, it determines the form of the nominal certificates of deposit, the conditions of their delivery up, and the securities wherewith this measure should be surrounded in the interest of the Society and of the shareholders.

Art. 18. Each share gives a right to a proportionate part

of the property constituting the assets of the Society (*l'actif social*).

Art. 19. Every share is indivisible. The Society recognises only one proprietor for each share.

Art. 20. The rights and the obligations attaching to a share follow the share-certificate in the hands of the holder.

The possession of a share implies absolute adhesion to the statutes of the Society and to the resolutions of general meetings of shareholders.

Art. 21. Restrictions as to remedies against Society, of creditors, of shareholders, and others.

Art. 22. The shareholders are only liable to contribute the amount of the capital of their shares, and beyond that any call of capital is prohibited.\*

Art. 23. The Council may authorize the issue of the share certificates in anticipation, but only by a general measure applicable to all the shareholders.

### CHAPTER III.—*Council of Administration.*

Art. 24. The Society is managed by a Council composed of 32 members, representing the principal nations interested in the undertaking.†

A Committee chosen out of the Council is specially charged with the direction and conduct of the affairs of the Society.

Art. 25. Non-responsibility of members of Council personally.

Arts. 26, 27. Members elected by general meeting for .

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\* See Article 73, and Code de Commerce, Article 33 : Les associés ne sont passibles que du montant de leur intérêt dans la société : confirmé by law of 24th July, 1867, Article 21.

† Reduced to 21 by resolution of General Meeting of 24th August, 1871 ; "Report," p. 12.

eight years ; rotation of members, one-eighth going out each year, but re-eligible ; casual vacancies.

Art. 28. Each member must be proprietor of 100 shares, which are inalienable, and remain deposited with the Society during the whole continuance of his functions.

Art. 29. Remuneration.

Art. 30. President and Vice-Presidents.

Art. 31. Meetings. Decision by majority present. Casting vote of President. Quorum.

Art. 32. General Secretary of Company may be present at sittings of Council, with right to join in deliberations.

Art. 33. Minutes of proceedings.

Art. 34. The Council is clothed with the most extensive powers (*des pouvoirs les plus étendus*) for the administration of the affairs of the Society.

It determines the propositions to be submitted to general meetings of shareholders.

It decides on the propositions of the Managing Committee respecting the objects here specified.

Art. 35. Nomination by Council of Managing Committee. Power of delegation of authority to officers of the Company and others.

Art. 36. Voting by proxy in Council not admitted.

When the Council has to deliberate on changes to be made in the tariffs or in the statutes, or on loans or increase of the capital of the Society, on questions of new concessions, on negotiations for union with other undertakings, on the dissolution and the winding up of the Society, the absent members are to have a month's notice of the object of the deliberation, and to be invited to take part in the vote, or to address their opinion in writing to the President, who is to read it at the meeting of Council, after which the decisions of the Council are adopted by the majority of votes of the members present.

CHAPTER IV.—*Managing Committee.*

Art. 37. The Managing Committee is composed of the President of the Council and of four members of it specially appointed.

Arts. 38, 39. Meetings. Minutes.

Art. 40. The Committee is clothed with full powers for the conduct of the affairs of the Society.

It represents the Society, and acts in its name by one or more of its members, in all cases where the intervention of the general meeting of shareholders or of the Council of Administration is not expressly required, especially as regards the objects here enumerated.

Actions are brought by or against the President and the members of the committee. Consequently, notices are to be served by and on the Managing Committee in the name of the Society.

Art. 41. Delegation of authority to servants of the Company and others.

Art. 42. An agent resides at Alexandria.\*

CHAPTER V.—*General Meeting of Shareholders.*

Art. 43. A general meeting regularly constituted represents the whole body of shareholders.

Art. 44. A general meeting consists of all shareholders holding at least twenty-five shares.

It is regularly constituted if the shareholders who compose it are in number forty, and represent one-twentieth part of the capital of the Society.

Art. 45. When on a first notice the shareholders present

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\* Altered by resolution of General Meeting, 2nd June, 1874, so that the Agent may reside anywhere in Egypt; "Report," p. 13.

do not fulfil the conditions above specified in order to give validity to the proceedings of the general meeting, the meeting stands adjourned, and the adjournment cannot be for less than two months.

A second notice is given in the prescribed manner.

The deliberations of the general meeting on this second occasion can only extend to the matters of which notice was given for the first occasion. The proceedings are valid whatever be the number of the shareholders present and of shares represented.

Art. 46. Annual general meeting in the first fortnight of May.\*

Extraordinary general meetings may be summoned by the Council of Administration.

Art. 47. Two months' notice of meetings.†

Art. 48. Shareholders, to have a right to be present or represented at a general meeting, must prove, at the domicile of the Society, at least five days before the meeting, that they have deposited their share certificates at the office of the Society, or with a representative of the Company (as here indicated).

Deposits made under these conditions confer a right to tickets of admission by name.

Shareholders having certificates of deposit‡ have also the right to have themselves represented at general meetings by proxies furnished with regular powers, the form whereof is determined by the Council.

Proxies must deposit their papers of authority at

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\* Altered by resolution of General Meeting of 6th August, 1864, so that the meeting may be held at any time from 1st May to 1st August on the summons of the Council.

† Altered to one month by resolution of General Meeting of 2nd August, 1869; "Report," p. 87.

‡ These are, I think, the certificates provided for by Article 17.

the domicile of the Society five days at least before the meeting.

No one can represent a shareholder at a meeting unless he is himself a member of that meeting.

Art. 49. Chairman. Scrutineers. Secretary.

Art. 50. Resolutions of a general meeting are adopted by a majority of votes of members present or represented.

The Chairman has a casting vote.

Art. 51. Twenty-five shares give one vote. The same shareholder cannot have more than ten votes, either as shareholder or as proxy.

Art. 52. Demand of ballot by ten members.

Art. 53. Minutes.

Art. 54. An attendance sheet, for the purpose of showing the number of members present at the meeting and the number of shares represented by each of them, is annexed to the rough minutes of the proceedings, as are also the proxy powers given by absent shareholders. This sheet is to be signed by each shareholder on coming into the meeting.

Art. 55. The Council settle the agenda (order of the day), for the General Meeting. No question other than those comprised in the agenda can be discussed.

Art. 56. General description of powers of general meeting followed by this :

The approval of a general meeting is necessary for every decision bearing on the following objects (that is to say) :

- (1.) New concessions.
- (2.) Union with other undertakings.
- (3.) Alterations of the statutes.
- (4.) Dissolution.
- (5.) Increase of capital.

- (6.) Loans.\*
- (7.) Settlement of accounts on completion of works.
- (8.) Settlement of annual accounts.
- (9.) Appropriation for reserve fund.
- (10.) Declaration of dividend.

Art. 57. Resolutions relating to the objects mentioned in Article 56, paragraphs, 1, 2, 3, 4, 5, and 6, must, to be valid, be adopted by a meeting comprising at least one-tenth of the capital of the Society, and by a majority of two-thirds of the votes of the members present, being at least 50 in number.

Art. 58. Resolutions of a general meeting adopted in conformity with the Statutes bind all the shareholders, even those who are absent or dissenting.

CHAPTER VI.—*Annual Accounts—Sinking Fund—  
Interest—Reserve Fund—Dividend.*

Art. 59. During the execution of the works an annual payment is made to the shareholders of interest at five per cent. on the sums paid by them in pursuance of Article 9.

Provision is made for payment of this interest by temporary investments and other extraordinary receipts, and, if necessary, out of capital.

Art. 60. Accounts for period of execution of works.

Art. 61. From and after the opening of the Maritime Canal, a general statement of the assets and liabilities of the Society up to 31st December last preceding, is prepared in the first quarter of each year, and is submitted to a general meeting.

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\* This is the first mention of loans. There is no limitation of amount or other restriction. Art. 62 also refers to loans.



Art. 62. The annual proceeds of the undertaking are applied in the first place in providing in the following order for—

1. The expenses of maintenance and working, the costs of administration, and generally all the charges of the Society.
2. The interest of and sinking fund for loans\* which may be contracted.
3. Five per cent. on the capital of the Society, to provide for shares redeemed and not redeemed,† an annual interest of 25 francs a share, the interest attributable to shares redeemed being carried to the sinking fund constituted under Article 66.
4. Four one-hundredths per cent. on the capital, also applicable to this sinking fund.
5. The amount required for creating or keeping up a reserve fund for unforeseen expenses, according to Article 69.

The excess of the annual proceeds, after these various prior charges, constitutes the net proceeds or profits of the undertaking.

Art. 63. The net proceeds or profits of the undertaking are divided in the following manner :—

1. 15 per cent. for the Egyptian Government.
2. 10 per cent. for the promoters.
3. 3 per cent.§ for the administrators.
4. 2 per cent for the establishment of a fund for pensions and other benefits for officers and servants.

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\* Art. 56.

† Art. 66.

‡ The difference between this and Art. 62 is to be noticed. There is no priority here ; the several sums would be allocated concurrently.

§ Reduced to 2 per cent. by resolution of General Meeting of 24 August, 1871 ; "Report," p. 12.

5. 70 per cent.\* as a divisible sum, to be divided among all the shares redeemed and not redeemed, without distinction.

Art. 64. Place of payment of interest and dividend.

Payment of interest, 1 July, 1 January.

Payment of dividend, 1 July.

Dividend on account, 1 January, if Council think fit.

Notice of payment.

Art. 65. Interest and dividend not claimed for five years forfeited.

Art. 66. The redemption of the shares is effectuated in 99 years, according to the table of redemption prepared in pursuance of the present Statutes.†

Provision is made for this redemption, as stated Art. 62, by means of an annuity of 0 fr. 04 c. per cent. on the capital of the Society, and of the interest at 5 per cent. on the shares from time to time paid off.

If it should happen that, in the course of one or more years, the net proceeds of the undertaking were insufficient to secure the payment off of the number of shares to be redeemed, the amount necessary for making up the sinking fund would be the first charge on the reserve fund, and, it failing, on the first net proceeds available for the purpose in subsequent years, in preference and priority to all distribution of dividend.

Drawings for shares to be paid off.

Art. 67. Publication of numbers drawn.

Art. 68. Place for payment of shares drawn.

The bearers of shares redeemed preserve the same rights as the bearers of shares not redeemed, with the

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\* Increased to 71 per cent. by same resolution.

† This table is not annexed to the Statutes.

exception of the interest at 5 per cent. on the capital which has been paid off to them.

Art. 69. The sum to be appropriated for creating or keeping up the reserve fund (Art. 62) is 5 per cent. on the annual proceeds, after deduction of the charges defined in paragraphs 1, 2, 3, 4, of that Article.

When the reserve fund amounts to five million francs, a general meeting of shareholders may, on the proposal of the Council, reduce or suspend the annual appropriation, to be resumed when the reserve fund is reduced below that amount.

Art. 70. The part of the annual profits set apart for the promoters is represented by special instruments of title, whereof the Council determines the number, the nature, and the form.\*

The provisions of Articles 17, 18, 19, and 21, relating to shares, are equally applicable to those instruments. Interest of promoters in lands.

#### CHAPTER VII.—*Alterations of the Statutes—Liquidation.*

Art. 71. If experience shows the advantage of modifications in or additions to the present Statutes, the general meeting provides for the same. (Art. 57.)

The resolutions of a meeting in this behalf can, however, only be put in execution after the approbation of the Egyptian Government.

Full powers are given beforehand to the Council, by a majority of two-thirds of the votes of the members present at a meeting specially summoned for this purpose, to consent to changes which the Egyptian Government may think necessary to make in alterations voted by a general meeting.

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\* These are the instruments called *Parts de Fondateur*.

Art. 72. In case of dissolution of the Society, a general meeting, on the proposal of the Council, determines the mode to be adopted either for liquidation or for the constitution of a new Society.

CHAPTER VIII.—*Jurisdiction—Disputes.*

Art. 73. The Society being constituted with approbation of the Egyptian Government, *sous la forme anonyme*,\* by analogy to the *sociétés anonymes* authorized by the French Government, it is governed by the principles of these last mentioned Societies.

The Society, although having its corporate seat *siège social*) at Alexandria, elects to have its domicile for legal and jurisdictional purposes (*domicile légal et attributif de juridiction*) at its administrative domicile at Paris, where all notices are to be served on it.†

Art. 74. All contentious matters arising among the members of the Society with reference to the execution of the present Statutes, and in relation to the affairs of the Society, are decided by Arbitrators named by the parties, one for each ; so that not more than one Arbitrator be named for all the parties representing one and the same interest.

The appeals from these decisions are taken to the Court of Appeal at Paris.

Art. 75. Contentious proceedings relating to the general

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\* In 1872 proceedings were begun by some shareholders with a view to the conversion of the Company into a French *société anonyme*, governed by Law of 24 July, 1867. The Council opposed, and the General Meeting rejected the proposal. "Report," 12 March, 1872.

† 1866-7. Proceedings taken by Company in French Courts. "Report," General Meeting, 1 August, 1867, p. 42.

1871-3. Litigation in Paris with Company of Messageries Maritimes.

and collective interests of the Society cannot be taken either against the Council of Administration or against one of its members except in the name of the whole body of the shareholders, and by virtue of a resolution of a General Meeting.\*

Every shareholder who desires to institute a contentious proceeding of this kind is to give notice thereof to the Council fifteen days at least before the General Meeting, the notice to be supported by the signature of at least ten shareholders, being in a position to attend the Meeting. The Council is then bound to put the question among the Agenda of the meeting.

If the proposition is rejected by the meeting, no shareholder can reproduce it in legal proceedings in his own interest. If it is admitted, the Meeting appoints as a Committee one or more persons to conduct the proceedings.

Notices arising out of the proceedings can only be addressed to that Committee. In no case are they to be addressed to the shareholders personally.

#### CHAPTER IX.—*Special Commissioner of Egyptian Government attached to Company.*

Art. 76. In conformity with the *cahier des charges*, a special Commissioner is attached to the Company, at its administrative domicile, by the Egyptian Government.

The Commissioner is empowered to take cognizance of the operations of the Society, and to make all communica-

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\* A French Court (Tribunal Civil de la Seine) is stated to have held that a shareholder cannot bring an action against the Council without the consent of a General Meeting. "Report," General Meeting, 1 March, 1872, p. 11.

Various proceedings by shareholders appear. "Report," General Meeting, 31 July, 1872, pp. 8, 9.

tions or notifications necessary for the accomplishment of his functions, with a view to the execution of the *cahier des charges* of the Concession.\*

CHAPTER X.—*Transitory Provisions—First Council of Administration.*

Art. 77. Constitution and special powers of first Council, to continue for five years after opening of Maritime Canal, with power to fill up vacancies, with saving for M. de Lesseps' presidency (Art. 20 of Second Concession).

CHAPTER XI.—*Publication.*

Art. 78. Publication of copies of Statutes.

The Viceroy having taken cognizance of the proposed Statutes, whereof the original, containing 78 Articles, is deposited in his archives, declares that he gives to the said Statutes his approbation, to the end that they may be annexed to the Concession and *cahier des charges* of even date herewith.

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*Financial Agreement containing the first settlement of account with the Egyptian Government respecting its Subscription.†*

August 6th, 1860.

In the present instrument is contained the following agreement respecting the shares of the Company which are to be inscribed in the name of the Viceroy to the number of 177,642.

Art. 1. There shall be carried in the books of the Com-

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\* Second Concession, Art. 9.

† "State Papers," vol. lv. p. 997.

pany to the debit of the Viceroy, as from 1 January, 1859, the amount of the two first instalments of one-tenth each.

	Fr.	c.
Equal, at 100 fr. a share, to . . . . .	17,764,200	00
Deduct sum to be credited to him for capital and interest of payments already made . .	2,394,914	52
Balance due by him . . . . .	15,369,285	48
Deduct interest due to him on sums paid by him between 1st January, 1859, and 31st December, 1859 . . . . .	121,242	60
Balance due to Company . . . . .	15,248,042	88

Art. 2. This balance shall be paid to the Company in bonds (*obligations ; sanad talab*) on the Egyptian Treasury to fall due at the times here stated, with interest at ten per cent. per annum, from 1st January, 1860, to the times of payment (which end on 8th December, 1866).

Art. 3. The bonds shall be accepted by the Company as cash, and their amount shall be passed to the credit of the account current of the Viceroy as from 1 January, 1860.

Art. 4. The amount of the two first instalments of one-tenth each on the shares having been thus paid, interest at five per cent. per annum shall be placed to the credit of the Viceroy, as from 1 January, 1860, and shall be paid half-yearly, 1 January and 1 July. The amount of this interest shall be deducted from the ten per cent. interest to be calculated on the amount of the bonds.

Art. 5. In conformity with the preceding Articles the Company is to deliver to the Viceroy shares equivalent to the amount of the sums so paid by him.

Art. 6. The remaining eight-tenths of the amount of the shares shall only be paid by the Viceroy as from 1 January, 1867, and up to 15 January, 1875, by one-eighth part a year divided equally over the several months of the year. The payment of these eight-tenths shall be effected by

means of bonds on the Treasury falling due at the times mentioned in the present Article, carrying interest equal to that which the shares are to carry, whereof the bonds are the equivalent, so that the interest on the two sides may be balanced.

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*Agreement between the Company and the Egyptian Government as to the Fresh-water Canal from Cairo to Ouady.*

March 18th, 1863.

(By this Concession the Company were bound to make this portion of the Canal, but it was admitted that the difficulties of expropriation so near Cairo would be enormous if the Company undertook it, and that it would be more suitable for the Government to do so.)

By Art. 1 the Company resigned its right, and agreed to enlarge its own section of the Fresh-water from Neficke to Suez so as to be navigable instead of merely suitable for irrigation.

By Art. 2 the Canal was to be of the dimensions settled by the International Commission, and to be constructed under supervision of the Company.

By Art. 3 the Government engaged to make no navigation charges on vessels entering or coming from the Company's Fresh-water Canals.

Art. 4 fixed a mode of arbitration in case of dispute. The whole was signed by Nubar Pasha and De Lesseps.\*

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\* See "Parl. Papers," Egypt, No. 6, 1876, where the whole of these documents will be found at length, in the original French.



*Financial Agreement for Settlement of the Balance of Payments on Shares subscribed for by Egyptian Treasury.*

March 20th, 1863.

In execution of the engagements contracted by the Egyptian Government it has been agreed between the Viceroy and the Company to liquidate in the following manner the participation of the Egyptian Government in the subscription of the capital of the Company.\*

The account of the subscriptions of the Egyptian Government to the capital of the Company settled up to 1 January last is as follows :

The Egyptian Government is subscriber for 177,642 shares.

	Fr.	c.
The 300 frs. a share already called constitute a total debit of . . . . .	53,292,600	00
From which deduct—	Fr.	c.
1. The amount of the advances made by the Egyptian Treasury for surveys and other preliminary purposes . . . .	2,516,157	12
2. Interest at 5 per cent. on that sum from 1 January, 1860, to 1 January, 1863, for the half-yearly coupons applicable to the instalments which this sum represents on account of the first call of 100 fr. made at the time of the subscription, 3 years .	377,423	55
3. The amount of the capital of the bonds already delivered to the Company (value as on 1 January, 1860) for the balance of the first call of 100 fr. a share	15,248,042	10
	18,141,622	77

Difference to the debit of the Egyptian Government on 1 January, 1860 (the interest due for this capital being set off against the half yearly coupons of the shares) . 35,150,977 23

\* "State Papers," vol. lv. p. 1002.

Whereas it is expedient to accomplish two objects—first, to release the Egyptian Government in relation to the Company, according to the resources and convenience of its Treasury, by placing it in a position equal to that of all the other shareholders, so that it will be able to have the free disposition of its documents of title ; secondly, to enable the Company to realize its capital according to its wants.

Art. 1. The Company preserve the free disposition of the bonds of the Egyptian Treasury already delivered to it in conformity with the agreement of 6th August, 1860.

Art. 2. For effecting the discharge of the second and third instalments of 100 francs, payable on the 177,642 shares, for which the Egyptian Government is subscriber, the Government engages to pay to the Company, as from 1st January, 1864, month by month until complete payment, the sum of one and a half million francs a month.

It is well understood, that in conformity with previous agreements, the sums paid by the Egyptian Treasury shall, as they are received by the Company, be placed to the credit of the account of the subscriptions opened with the Viceroy, and shall carry the interest at 5 per cent. per annum, belonging to the half-yearly coupons due on the shares ; the interest reciprocally due for the surplus being set off.

Art. 3. The Government reserves the option, when the convenience of its treasury requires, to remit to the Company the amount of the monthly payments above agreed for in paper (*bons*) of the Treasury, negociable and under the following conditions :—

(1.) The charges of discount and of negotiation shall be borne by the Government, so that the Company may always receive payment without deduction and in specie.

(2.) The paper is to be delivered to the Company a month at least before date of payment.

Art. 4. For the two other fifths, the Government reserves to itself the right when the Company makes a call on its shareholders to make, in agreement with the Company, such arrangements as will suit the state of the Treasury.

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*Interposition of Porte.*

April 6th, 1863.

The Porte, seeing in the concession of the Fresh-water Canal and of vast tracts of land a menace to its independence, and in the stipulations for the providing of workmen a contravention of the laws under which the Ottoman Empire is governed, declared, by a diplomatic note of this date, addressed to its representatives in Paris and London, its opposition to the continuance of the works.\*

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*Arbitration by Emperor of French.*

July 6th, 1864.

The total sum awarded by the Emperor was eighty-four millions of francs. Payment was to be spread over a period of 15 years, ending with 1st November, 1879. The amount was made up as follows :†—

	Fr.
Compensation for substitution of machines and European workmen for Egyptian workmen . .	38,000,000
Compensation for resumption of land granted . .	30,000,000
Compensation for dues to be levied on Fresh-water Canal . . . . .	6,000,000
Repayment of sums expended for works done or to be done at Fresh-water Canal . . . . .	10,000,000
Total . . . . .	84,000,000

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\* "State Papers," vol. lv. p. 1006 n.

† Published in the *Moniteur* 2nd August, 1864 ; in Lord Cowley's despatch of 2 August, 1874. "State Papers," vol. lv. p. 1004.

*Agreement with Egyptian Government.*

January 30th, 1866.

Art. 1. Egyptian Government to keep strategical points.\*

Art. 2. Power for Government to occupy sites for post-offices, customs, barracks, and other services.

Art. 3. Right of individuals to establish themselves along the Maritime Canal.

Arts. 4, 5. Egyptian Government to take possession of the Fresh-water Canal on terms here specified.

Art. 6. Company sells to Government property of the Wady (Toumilat) for ten million francs.

Art. 7. If Fresh-water Canal delivered by Company to Government in 1866, sums due by Government as well on this account as for purchase of property of Wady (together twenty million francs) shall be paid to the Company between 1st July and 1st December, 1866.

In case the call remaining to be made on the shares is made recoverable by the Company in 1866 the amount of the sums due on this head by Government, being seventeen and a half million francs, or thereabouts, shall be paid to the Company between 1st January and 1st December, 1867.

The sums forming the balance of compensation agreed to by Government recoverable after 1st November, 1866 (about 57,750,000 fr.), shall be paid to Company between 1st January, 1867, and 1st December, 1869, as here specified.

All payments to be made to the Company in *francs effectifs*.

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\* "State Papers," vol. lvi. p. 274.

*Agreement with Egyptian Government made in execution  
of the Emperor's Award.*

February 22nd, 1866.

Recitals of the instruments above-mentioned of 30th November, 1854; 5th January, 1856; 20th July, 1856; 18th March, 1863; 20th March, 1863; 30th January, 1866.\*

The Porte, on being solicited in conformity with the Concession of 5th January, 1856, to give its ratification to the Concession of the undertaking of the Canal, declared, by a Note of 6th April, 1863, the conditions to which this ratification was subjected :

In order to give full satisfaction in this respect to the Porte, an understanding has been come to between the Viceroy and the Company, embodied in the Agreement whereof the clauses and stipulations follow :

Art. 1. Revocation of instrument of 20th July, 1856, regulating employment of Egyptian workmen, and of part of Article 2 of Concession of 5th January, 1856, relating to same subject.

Egyptian Government to pay as compensation 38,000,000 francs.

Company to procure for itself, without privilege and without restriction, the necessary workmen.

Art. 2. Company renounces benefit of Articles 7, 8 of Concession of 30th November, 1854, and of Articles 10, 11, 12, of that of 5th January, 1856.

Art. 3. Compensation due to Company by Government for surrender of lands, 30,000,000 fr.

Art. 4. Extent of lands to belong to Company, fixed by plans and tables annexed.†

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\* "State Papers," vol. lvi. p. 277.

† Report of Commissioners appointed to fix the boundaries of the

Arts. 5, 6, 7. Company surrenders to Government the second part of the Fresh-water Canal between the Wady, Ismailia, and Suez, on terms here specified.

Art. 8. Total compensation due to Company 84,000,000 fr., to be paid to it by Government, with residue of the amount of the shares of Government, in case of Company making a call in 1866, and 10,000,000 fr., price of sale of Wady, in manner indicated in table annexed.\*

Art. 9. The Maritime Canal and its appurtenances remain subjected to the Egyptian police, which shall exercise its functions freely, as at every other point of the territory, so as to secure good order, the public peace, and the execution of the laws and regulations of the country.

The Government to enjoy the right of passage *à travers* the Canal without charge.

Arts. 10, 11. Government to occupy positions for defence, for post-offices, and other establishments.

Art. 12. Right of individuals to settle along Canal.

Art. 13. It is understood that the establishment of Customs services is not to interfere in any way with the freedom in respect of Customs duties of the general traffic carried *à travers* the Canal by vessels of all nations without distinction, exclusion, or preference in respect of person or of nationality.

Art. 14. Egyptian Government, in order to insure the faithful execution of the Agreements between it and Company, to have a right to keep, at its own expense, a Special Commissioner attached to Company and at works.

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lands necessary for the proper working of the undertaking of the Maritime Canal, and to be enjoyed by the Company during its Concession, printed in "State Papers," vol. lvi. p. 285.

\* This Table is printed in "State Papers," vol. lvi. p. 284. It provides for payment of 101,850,000 francs, by instalments, ending 1st December, 1869. These payments have been made.

Art. 15. It is declared, by way of interpretation, that at the expiration of the 99 years of the concession of the Canal of Suez, and in default of any new agreement between the Egyptian Government and the Company, the concession shall absolutely cease.

Art. 16. The Universal Company of the Maritime Canal of Suez being Egyptian, it is governed by the laws and usages of the country; at the same time, as regards its constitution in the character of a Society, and the relations of its members among themselves, it is, by virtue of a special Agreement, regulated by the laws which in France govern the *sociétés anonymes*. It is agreed that all disputes on this head shall be decided in France by arbitrators, with appeal to the Imperial Court of Paris as umpire.

Differences in Egypt between the Company and individuals, to whatever nationality they belong, shall be judged by the local tribunals, according to the forms prescribed by the laws and usages of the country and the Treaties.

Disputes arising between the Egyptian Government and the Company shall also be submitted to the local tribunals, and decided according to the laws of the country.

The overseers, workmen, and other persons belonging to the administration of the Company, shall be judged by the local tribunals according to the local laws and the Treaties, in respect of all offences and disputes where the parties are natives, or one of them is a native.

If all the parties are foreigners, proceedings among them shall be carried on in conformity with established rules.

Every notice to the Company by a party interested in

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Egypt shall be valid if given at the seat of administration at Alexandria.

Art. 17. All former instruments, concessions, agreements, and statutes, remain in force in all provisions not inconsistent with the present agreement.

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*Firman of Sultan.*

March 19th, 1866.

My illustrious Vizier, Ismail Pasha, Viceroy of Egypt, and so forth :\*

The realization of the great work destined to give new facilities to commerce and for navigation by the cutting of a Canal between the Mediterranean and the Red Sea being one of the most desirable events in this age of science and of progress, conferences have been had for some time past with the Company which asks authority to execute this work, and they have ended in a manner conformable, as regards the present and the future, with the sacred rights of the Porte, as well as with those of the Egyptian Government.

The agreement, the tenor of the articles whereof here follows in translation, has been drawn up and signed by the Egyptian Government, in conjunction with the representative of the Company ; it has been submitted for Our Imperial sanction, and, after having read it, We have given Our assent to it.

(Here follows at full length the Agreement of 22nd February, 1866.)

The present Firman, emanating from Our Imperial

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\* " State Papers," vol. lvi. p. 293.



Divan, is delivered to this effect, that we grant Our sovereign authorization for the execution of the Canal by the said Company, on the conditions prescribed in that Agreement, as also for the regulation of all accessory matters according to that Agreement, and the instruments and agreements therein incorporated and referred to, which form an integral part thereof.\*

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*Agreement with Egyptian Government.*

April 23rd, 1869.

Article 1. Company to be subject to Customs and other duties and taxes.

Art. 2. Surrender of all claims on part of Company respecting Fresh-water Canal.

Art. 3. By consent of both parties it is understood that the Company has no other object than the working, maintenance, and improvement of the Maritime Canal. It consequently retires into the position which it would have as of common right, and renounces every special exception, liberty, or privilege. Accordingly, the Government shall henceforth exclusively perform post-office and telegraph services for the Company, as for the public. The Company shall preserve, however, the liberty of having its special telegraph for its services connected with the works, and the transit of vessels in the Maritime Canal.

Fishing ; Fishing Boats.

Art. 4. Sale of lands appurtenant to Canal. Sale money to be divided equally between Government and Company.†

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\* This includes the Statutes.

† This is regulated by a special agreement of even date, with an Additional Article published in "Report," General Meeting, 2 August, 1867, p. 27.

Art. 5. The Company renounces, in relation to the Egyptian Government, all claim or compensation whatever, as well on its own account as on that of its contractors, in respect of any real or alleged damage anterior to the date of the present Agreement.

Art. 6. The advantages accruing to the Government from the preceding Articles are taken by agreement as of the value of 20,000,000 fr.

Arts. 7, 8, 9. The Company grants to the Government for 10,000,000 fr. buildings and property here specified, on terms.

Art. 10. The payment of the 30,000,000 fr. before stipulated, shall be made by the Government to the Company, by means of the immediate delivery of so many coupons of interest on shares of the Company as will be necessary to pay that sum, with interest at 10 per centum per annum, detached from the 176,602 shares in the Company whereof the Government is proprietor.

The coupons to be delivered up shall be those which will begin to fall on 1st January, 1870.

In consideration of this surrender of coupons, as above expressed, the President Director gives, as from this time, in the name of the Company a good and effectual receipt to the Viceroy for the said sum of 30,000,000 frs.

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